

## REVIEW ARTICLE

# Bridging Theory and Practice in HIV Prevention for Rural Youth, Nigeria

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## Abstract

Thirty years into combating the spread of HIV through behaviour change interventions experience has grown in the application of multiple approaches from one-for-one counseling and small group workshops, information sessions, and activities to large-scale rallies and mass media campaigns with reducing the spread of HIV. These approaches have been variously guided by best field practice and theoretical frameworks developed to understand health-related behaviours and behaviour change. This article reviews the dominant theoretical approaches used to develop behaviour change interventions and strategies and presents the theoretical frameworks guiding the multi-level strategy to reduce youth vulnerability in Edo State, Nigeria known as *HIV Prevention for Rural Youth* (HP4RY). HP4RY is set within the multi-level Ecological Framework and specifically uses Sexual Scripting Theory and the AIDS Competent Community theoretical framework to guide an Action Research project that uses research to enhance the Family Life and HIV Education (FLHE) programme delivered in Junior Secondary Schools and a Community Mobilization programme led by members of the National Youth Service Corps. The benefits to using these theories and their fit with contemporary thinking in the field of HIV prevention through behaviour change are reviewed here (*Afr J Reprod Health 2012 (Special Edition); 16[2]: 39-53*).

## Résumé

Après trente ans de la lutte contre la propagation du VIH à travers des interventions basées sur la modification du comportement, l'expérience s'est accrue dans l'application de multiples approches partant des conseils seul à seul et des ateliers à petits groupes, des sessions et des activités d'information jusqu'à des rassemblements et des campagnes à grande échelle pour réduire la progression du VIH. Ces approches ont été guidées par de meilleures pratiques sur le terrain et des cadres théoriques qui ont été élaborés pour comprendre les comportements associés à la santé ainsi que la modification dans le comportement. Cet article passe en revue les approches théoriques prédominantes dont on se sert pour élaborer des interventions et des stratégies qui visent la modification de comportement et présente des structures théoriques qui dirigent la stratégie à plusieurs niveaux pour réduire la vulnérabilité de la jeunesse dans l'état d'Edo, Nigeria, connu comme la *Prévention du VIH pour la jeunesse rurale* (HP4RY). HP4RY se situe au sein d'un cadre écologique à plusieurs niveaux et utilise la Théorie du Scripting Sexuel et le cadre théorique de la communauté Compétente du VIH pour guider un projet de Recherche d'Action qui se sert de la recherche pour améliorer les programmes de la Vie Familiale et l'Education du VIH (VFEV) assurés aux Collèges et un programme de la mobilisation d'une Communauté mené par les membres du Corps du Service National de jeunes. Les bénéfices tirés de l'utilisation de ces théories et leur place dans le contexte de la pensée dans le domaine de la prévention du VIH à travers des modifications de comportement font l'objet de cette étude (*Afr J Reprod Health 2012 (Special Edition); 16[2]: 39-53*).

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**Keywords:** HIV prevention, behaviour change theory, Nigeria, youth

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## Introduction

We are 30 years into combating the spread of HIV through behaviour change interventions. Multiple

approaches have been used from one-to-one counseling and small group workshops, information sessions, and activities to large-scale rallies and mass media campaigns. These have

been variously guided by experience and best practice and by theoretical frameworks developed to understand health behaviours and behaviour change. Across multiple reviews and meta-analyses<sup>1, 2</sup> building interventions on established, evidence-supported theories has been shown to increase behaviours that carry little or no risk for HIV acquisition. However, recent assessments of the state and impact of intervention delivery on the global epidemic<sup>3-5</sup> have led to questions about the impact of the predominantly individual- and small group-based interventions on long term behaviour change and HIV incidence. This has led to recommendations to shift intervention efforts toward multi-level strategies that include not only individual but also community and societal initiatives. In addition, in the face of difficulties with large-scale roll out of interventions<sup>5, 6</sup>, a second recommendation has been to focus attention on the development of implementation theory and science. This paper presents the theoretical frameworks used to inform a set of multi-level, evidence-based interventions to reduce youth vulnerability to HIV that are being delivered in Edo State, Nigeria. It situates them within the frameworks that have dominated the HIV intervention field.

## **Dominant Theoretical Approaches to HIV Prevention Among Youth**

Interventions designed to reduce HIV transmission and acquisition in populations in Sub-Saharan Africa (SSA) have been guided by the epidemiological profile of HIV on the continent and a focus on the biomechanisms of transmission. These include transmission primarily through heterosexual intercourse with overall prevalence nearly equal among men and women and age-specific incidence demonstrating higher rates of HIV acquisition at a younger age among women than men<sup>7</sup>. The behaviours most often targeted are one or a combination of ABC (**A**bstain from sexual activity, **B**e faithful for life to a single uninfected partner, use **C**ondoms). Often included under A is delaying first intercourse and, under B, reducing the number of sexual partners or 'zero grazing,' i.e. restricting sexual partners to those within a limited circle. Not considered in the ABC

prescription is how people understand illness in general and AIDS in particular, or how the sexual practices targeted in ABC are incorporated into gender and sexuality in diverse cultural and social settings. It is left to socio-cultural and behavioral theories to guide attempts to shift sexual practices in the direction of A, B and C.

### **Individually-Focused Behavioral Intervention Theories**

Individually-focused behavioral intervention theories address how cognitive processes contribute to behaviours such as abstinence, monogamy and condom use. These cognitive-behavioral theories were developed predominantly in 'western' countries and are grounded in psychological understandings of human behaviour. They have dominated intervention development in these countries. Whether delivered one-to-one, to groups, or to masses of people, and whether in schools, communities, workplaces, clinics, recreational centres or as mass media, cognitive-behavioral theories, or their component parts, have been at the core of many interventions. The individual as an autonomous decision-maker is privileged in these theoretical models with individual behaviours modeled as the result of the internal, subjective processing of information. The more commonly used cognitive-behavioral theories used in HIV risk reduction interventions include: Health Belief (HBM)<sup>8, 9</sup>, Rational and/or Planned Action (TRA OR TPB)<sup>10-13</sup>, Social Learning (SLT)<sup>14</sup>, AIDS Risk Reduction (ARRM)<sup>15</sup>, and Stages of Change<sup>16</sup>.

In these theoretical approaches A, B and/or C are modeled as determined by knowledge and attitudes, with the influence of more distal environmental contexts and conditions (e.g. cultural, structural, interpersonal, relational) subjectively interpreted and filtered through knowledge and attitudes. When used in intervention development, these theories focus attention on identifying gaps in knowledge (e.g., endorsement of myths, misinformation or absence of knowledge) and attitudes that detract from the desired behaviours (e.g. believing that you are not at risk of infection, that multiple partners are necessary, that condoms inhibit pleasure).

Interventions are then designed to specifically address these and to reinforce knowledge and attitudes that contribute to the desired behaviours. The key difference between these models is in the specification of relevant attitudes. The HBM<sup>8,9</sup> is the oldest of the models and posits that individuals will change their behaviours if they perceive themselves to be susceptible or at high risk of acquiring HIV, that HIV is very serious, that it can be prevented through specific behaviours, that there are definite benefits and few barriers to engaging these behaviours, and there is motivation to act. TRA and TPB<sup>10-13</sup> build on the HBM and specify an array of diverse attitudes (affective, cognitive, personal norms, social norms). In addition, the AIDS Risk Reduction<sup>15</sup> and Stages of Change<sup>16</sup> models add a focus on behaviour *change* to the basic premises, including change as a staged process with different kinds of knowledge, attitudes and beliefs operational at different stages.

Among these models, it is Social Learning Theory (SLT)<sup>14</sup>, that provides a framework for understanding *what needs to be done* to establish or change behaviours. SLT views individuals as active agents in their learning. Consistent with this view, behaviour change interventions require participatory, active pedagogy such as role plays, practice exercises and not just didactic or recitational work. Behaviours develop or are changed based on self efficacy or the personal conviction that one is able to act in a particular way; on having or acquiring the skills required for a particular action; and on seeing/knowing respected or close others who are successful in a particular action. It is common for SLT to be used either on its own or in combination with one of the other cognitive theories in designing HIV prevention interventions. In reviews and syntheses of evaluated school-based interventions conducted by Gallant and Maticka-Tyndale<sup>17</sup> for SSA and by Kirby et al.<sup>1</sup> globally, SLT or its components was the most commonly used theoretical framework.

Individually targeted interventions have demonstrated efficacy in changing behaviours over the short-term. Questions about the sustainability and transferability of those changes in 'real world' environments have led to two major criticisms of the applicability of these theories to HIV

prevention<sup>18, 19</sup>. The first is that cognitive-behavioral theories pay little or no attention to contextual factors that may make it difficult, impossible, or undesirable to act in the ways promoted by an intervention, especially over the long term. Cognitive models that do incorporate contextual factors (e.g. TPB) do so only as they are subjectively perceived, ignoring their objective impact. The second, related, criticism is that these models focus on individuals when the sexual practices in question occur between at least two people. As with contextual factors in general, it is only the subjectively defined perception of a partner that is included in these models and not the objective 'power' of a partner to influence or control sexual activity. Considering these critiques, it has been suggested<sup>18, 19</sup> that what is needed are theoretical models that understand sexual practices as diverse, contextual, historyed, and partnered. External conditions must be considered as having both subjective (as perceived, understood and interpreted by an individual) and objective (independent of how they are perceived) influences on sexual practices.

### **Socially Focused Theories**

Socially focused theories are grounded in sociological understandings of human behaviour and interactions. They place individuals and their actions (e.g. sexual practices) within the context of social relationships such as families, partnerships and peer groups. Peer networks and the norms of behaviour in these networks are often the target for change in socially focused interventions.

### **Peer Leadership**

Peer led programs have been delivered in schools, clinics, community centers, workplaces, and in informal settings where members of target populations congregate. Peer education and peer-led interventions typically target peer groups and communities rather than individuals as the unit of change, with agents of change coming from within the group or community (i.e. peers) rather than brought in from the outside. The approach is based on the assumption that peers learn from each other, are important influences on each other, and that

norms and behaviors are most likely to change when liked and trusted group members take the lead in change<sup>20-24</sup>. Apart from these assumptions, there is no developed theory of peer leadership or education; rather, it has been described as a method in search of a theory<sup>24</sup>.

Despite the absence of a theoretical framework, by the 1990s, peer education was one of the most widely used approaches in HIV prevention initiatives<sup>25,26</sup>. Today, peer education is included as a component in a number of large-scale initiatives designed to reduce the spread of HIV among youth, including the 100 million pound initiative funded by the Department for International Development, UK in Nigeria ([www.dfid.gov.uk](http://www.dfid.gov.uk)) and South Africa's National HIV Prevention Program for Youth, LoveLife ([www.kff.org/about/lovelife.cfm](http://www.kff.org/about/lovelife.cfm)). Following a model that networked peer educators across 14 countries in the European Union called EUROPEER, both national and international organizations have been formed in other world regions. NOPE (National Organization of Peer Educators; website [www.nope.or.ke](http://www.nope.or.ke)), for example, mobilizes peer-led community interventions and trains and networks peer educators across Kenya. YPEER (Youth Peer Education Network; website [www.youthpeer.net](http://www.youthpeer.net)), with chapters in 27 countries in Eastern Europe, Central Asia, the Arab States and Africa, networks and trains peer educators and expands peer-led programming within and across regions.

In their review and synthesis of peer-led HIV interventions in low income countries, Maticka-Tyndale and Barnett<sup>27</sup> found specific theoretical frameworks articulated in only 8 of the 24 interventions that they reviewed. These were most often models of cognitive behaviorism, especially SLT. They commented, however, that the commonly targeted outcomes of knowledge and attitudes and the intervention strategies and procedures suggested that if theoretical frameworks were identified for the remainder of the interventions they would also be cognitive behavioral – and predominantly SLT -- models.

### Diffusion of Innovation

Diffusion of Innovation or Social Diffusion Theory shares and builds on the assumptions of

peer leadership. It was first articulated by Rogers in 1983<sup>28</sup> who specified how new ideas, technologies, fads, and lifestyles become common and normalized by spreading through interpersonal networks. Jeffrey Kelly<sup>29</sup> developed the Popular Opinion Leader (POL) model of HIV prevention based on Roger's earlier work. POL is based on the premise that behaviour change will spread through a population "if enough natural and influential opinion leaders within the population visibly adopt, endorse, and support an innovative behaviour"<sup>30</sup> (p. 140). This peer-based approach distinguishes itself by enumerating specific steps and 9 necessary 'core elements.' While the POL model has demonstrated effectiveness among several groups in interventions delivered in the United States,<sup>30</sup> the results of a 5 country trial of the model suggest that there are difficulties in obtaining the same results in other country/cultural settings<sup>31</sup>. Peer-led and Popular Opinion Leader models counter some of the criticisms of the individually focused theories in recognizing the influence that people have on each other, placing individuals into groups, and focusing on group change. However, they still do not address the structural factors that place conditions on sexual practices, individual agency and choice.

### Structural Approaches

Although statistically significant behaviour changes have resulted from interventions using the cognitive and social influence models described above, Coates, Richter and Caceres<sup>3</sup> note in their lead article to a special issue of *The Lancet*, that these changes are rarely sufficient to reduce the incidence of STIs or HIV. Gupta and colleagues,<sup>32</sup> writing in the same issue, further observe that such interventions cannot succeed in the long term unless they address the underlying structural drivers of the epidemic such as poverty and gender inequality. Both sets of authors call for multi-level strategies that combine behavioral and structural approaches.

Research and theorizing on structural influences in SSA have focused on poverty and gender-power which separately and jointly set contexts and conditions for the sexual behaviours that are proximal influences on HIV acquisition.

Setting change in one's own sexual practices as a priority is problematic when faced with the desperation and immediate survival needs that accompany poverty and/or an unwilling partner. Studies have consistently demonstrated associations between poverty and sexual behaviour<sup>33-36</sup>. However, despite the extensive theoretical discussions of how poverty drives vulnerability to HIV infection, examinations of the pathways of influence of either individual or community-level poverty on prevalence or incidence of HIV are few. The interaction between poverty and gender in influencing sexual behaviours is evidenced in Janet Wojcicki's<sup>36</sup> comparison of the impact of economic conditions on women's risk of HIV infection in countries in Eastern, Southern and Central Africa. Differences across these regions in the influence of poverty on sexual relationships and practices were explained by a combination of general and comparative wealth in communities together with the gender norms underpinning them at various ages and relationship statuses. Wojcicki's results clearly illustrate that it is insufficient to consider individual economic status devoid of the economic, social and cultural contexts as lived in communities and how these influence gender-power and relations.

Research from diverse regions of SSA documents disparities in gender-power in sexual relationships<sup>37-40</sup>, and supports the conclusion that gender and sexual norms promote male dominance, a belief in male sexual need, and female subservience to that need. Gendered power is exercised by men through wealth, force and violence and by women through using their sexuality for material gain. These norms and their expression in sexual practices have been shown to work against the realization of all three of A, B and C<sup>38-44</sup>.

The complexity of changing sexual practices through interventions at the structural level is evidenced in outcome evaluations of programmes such as Stepping Stones, used in multiple countries both in SSA and other parts of the world<sup>45-47</sup> and Intervention with Microfinance for AIDS and Gender Equity (IMAGE) evaluated in South Africa<sup>48</sup>. Both are designed to influence gender-power relations at the community level and

through this to affect sexual practices and HIV incidence. Stepping Stones works with diverse groups of men and women and uses workshops to develop critical thinking skills and to challenge and shift thinking, norms and behaviours that disadvantage women and that promote male domination, force and violence. IMAGE combines similar workshops with a microfinance scheme targeting women in poor communities in an attempt to decrease their economic dependence, increase their economic wellbeing, and empower them to confront intimate partner violence and traditional gender norms and roles. Evaluations of both interventions have demonstrated a decrease in intimate partner violence and a shift in attitudes and actions in the direction of greater gender equity as a result of programme participation. Neither, however, has produced change in targeted sexual practices such as condom use<sup>45-48</sup>. The desirable, but limited, outcomes of interventions delivered separately at the individual, group and structural level lend support to calls for interventions that cut across all levels<sup>3-5, 32</sup>.

### **Theories of Intervention Testing and Implementation**

Classical theories of intervention testing separate the development and testing of the efficacy of an intervention from its effectiveness. Efficacy is tested in a setting where external influences and variations are controlled so that the focus can be on the intervention with the focal question whether the intervention can produce the desired change. Only after efficacy is established is the intervention tested in real life conditions with participants who reflect the diversity of the targeted population. Based on these tests of effectiveness, guidelines can be produced for 'real life' delivery, including which conditions or population subgroups may respond differently to the intervention and specific contextual issues that need to be taken into consideration for different population subgroups. Following this, the intervention is ready to be implemented on a large scale. Examples of the application of this theory of intervention development abound<sup>1, 17, 27, 31</sup>. With few exceptions, however, it is only the efficaciousness of interventions that has been

tested. Tests of effectiveness are rare and large-scale implementation following testing even more so. This has led to the observation that the landscape is littered with interventions that have been tested in the rarefied 'fishbowl'-like environment of efficacy trials, with few moving to tests of effectiveness in real world environments and fewer yet proceeding to delivery on a large-scale. Both Solomon et al.<sup>5</sup> and Glasgow et al.<sup>4</sup> question whether it is even reasonable to expect that efficacious interventions will be effective given the different premises on which establishing efficacy and effectiveness are based. The United States Centers for Disease Control has attempted to solve the implementation problem by publishing a Compendium of interventions tested on various subgroups in the United States that have proven efficacy<sup>49</sup> and have made the Compendium readily available on the internet (<http://www.cdc.gov/hiv/topics/research/prs/evidence-based-interventions.htm>). Its Diffusion of Effective Behavioral Interventions (DEBI) programme further encourages the take-up of efficacious interventions, making them available in a 'packaged' format together with training for delivery to organizations working in the arena of HIV prevention (see <http://www.effectiveinterventions.org/en/home.aspx>).

Intervention evaluation and refinement is far less developed in SSA. Numerous interventions have been tried, some have been formally evaluated for efficacy, although few have used a rigorous methodology<sup>17, 50-52</sup>; fewer still have gone beyond efficacy to effectiveness. Several exceptions to this pattern are interventions that 'skipped' the efficacy stage and instead moved directly to evaluation in 'real life' situations to assess effectiveness. Examples include Primary School Action for Better Health (PSABH), an upper primary school HIV prevention initiative in Kenya<sup>53-56</sup>; loveLife, a multifaceted intervention targeting youth in South Africa<sup>57, 58</sup>; and a version of the AIDS Competent Community model applied in multiple countries in SSA and Asia<sup>59</sup>. The risks associated with moving directly to tests of effectiveness are that considerable investments may be made in an intervention that has little or no effect, or, in a worst-case scenario, an undesirable effect. The risk of a negative or undesirable effect

is reduced when an intervention is based on social research about sexual practices and how they are influenced combined with research evidence that specific intervention components can produce specific desirable effects. When these are present, there is a strong sociological plausibility that the intervention will *not* have undesirable results and *could* produce desirable results. The benefits to moving immediately to tests of effectiveness are lower costs and reduced time between intervention development and large-scale implementation. The risks associated with first conducting tests of efficacy are that even if the intervention demonstrates desirable outcomes, there are yet additional steps and funds required to determine whether it can be delivered and has a desirable impact in the 'real world' before it can be implemented. An additional risk is that attention in the design will focus on creating the best intervention for the greatest impact while ignoring issues of feasibility of large-scale delivery, costs relative to benefits, and sustainability of the intervention and its effects. These issues are typically left to the stage of effectiveness tests.

Sorely lacking are Implementation Theories or Models, i.e. explanations of how to move from testing or evaluating an intervention on a limited scale to implementing it over wide geographical regions or to entire populations.

## **The Context: HIV Prevention for Rural Youth (HP4RY), Nigeria**

The HP4RY project was designed to develop and test HIV prevention interventions targeting youth in rural regions of Edo State, Nigeria. The project brought together a team of Nigerians and Canadians with combined experience in developing and testing research-based HIV prevention initiatives in Thailand and Kenya<sup>53-56, 60</sup>, research experience with youth in SSA<sup>61</sup> and social issues related to HIV<sup>62, 63</sup>, conducting health and development work in rural communities in southern Nigeria (see website of Centre for Population and Environmental Development, a partner in the HP4RY project: [www.cpedng.org](http://www.cpedng.org)), advancing the sexual health and rights of Nigerian youth (see website of Action Health Incorporated,

a partner in the HP4RY project:  
www.actionhealthinc.org).

### Theoretical Frameworks of HP4RY

The HP4RY project takes an approach to prevention that places individual risk of acquiring HIV within the context of interpersonal networks, community, and broader social and cultural contexts. HP4RY is set within the theoretical frameworks of Social Ecology<sup>64-67</sup>, Sexual Scripting Theory<sup>68,69</sup>, and AIDS Competent Communities<sup>21,70</sup> all of which take a multi-level approach to understanding social behaviors that spans the individual, interpersonal, cultural and structural domains. The methodological theory that guides the research, programme development and evaluation is Action Research<sup>71,72</sup> which counters the problems identified by Glasgow et al.<sup>4</sup> and Eke et al.<sup>73</sup> by incorporating the sharing and translation of knowledge into programmatic and policy actions directly into the research process. The development of interventions is based on the principal of designing programmes using local resources and infrastructures to facilitate sustainability and wide-scale implementation that was developed in similar projects in Thailand and Kenya<sup>53, 60</sup>.

### Theories Guiding the Understanding of HIV Risk and Vulnerability

#### Social Ecology Theory

From the perspective of Social Ecology Theory, HIV transmission is located within a dynamic interplay between individual, social, cultural, religious, political and economic systems and environments<sup>64-66</sup>. This can be portrayed as a series of concentric and intersecting circles (see Figure 1) with HIV transmission at the centre of a microsystem layer of interpersonal interactions, relationships, experiences and expectations. This is set within a mesosystem layer of parents, friends, homes, school, work – those who directly set the context for the regular activities and interactions of daily life. This, in turn, is embedded in an exosystem comprised of social settings such as the economic or political system in which individuals do not play a direct, active role, but which, nevertheless, set the context and influence more immediate relations and experiences. The macrosystem, comprised of cultural and religious influences, is where the broader ideologies and ways of thinking and being are located. Finally, Bronfenbrenner<sup>64</sup> places this multi-layered system within a temporal frame, the chronosystem, which encompasses the patterning of environmental

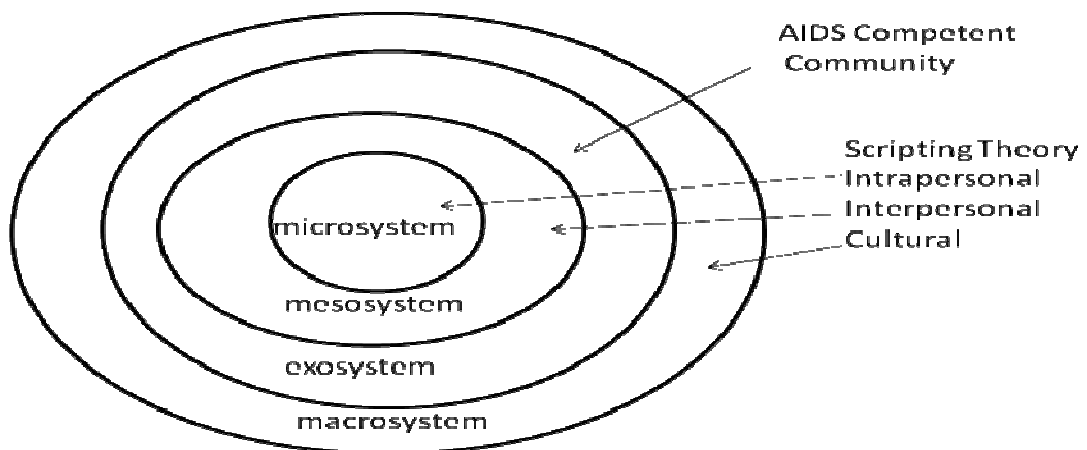


Figure 1: Ecological Framework with AIDS Competent Community And Scripting Theory

events and transitions over the course of life. In the HP4RY project, the Social Ecology model insures that research to enhance our understanding of the sexual transmission and acquisition of HIV is not restricted to a behavioral approach, but takes into account relationships, networks, cultural ways of thinking, norms and expectations, and structural and social environments that set the context and conditions for sexual practices and interactions that carry a risk of HIV transmission.

### ***Sexual Scripting Theory***

Sexual Scripting Theory, developed by John Gagnon and William Simon<sup>68,69</sup>, has roots in sociology. Consistent with Social Ecology theory, it addresses sexuality and sexual practices as existing within multiple layers of social influences. Sexual activities are understood as constructed from the interplay between cultural messages about sexuality, identification of situations as sexual, interpersonal negotiation and intrapersonal emotions, attitudes, knowledge, perceptions, and interpretations. Sexual acts or practices per se are theorized as the end result of a codified sequence of events which is much like the script of a play. As in plays, movies or stories, scripts guide the sequence or order of events for the who, when, where, what, why and how of sexual practices. Scripts become the templates used to interpret and respond to situations as sexual. Scripting takes place at three basic levels that parallel the macro, meso and micro levels of the Social Ecological framework: cultural, interpersonal and intrapsychic. At the cultural level, scripts are experienced as instructions, norms, guides, ways of thinking, and rules imbricated with norms, guides, ways of thinking, etc. for other personal and social areas such as gender and are conveyed through social institutions like the family. They influence how situations are perceived and acted on. Scripts are taught and reinforced during the course of socialization through cultural traditions, expectations, and norms. Intrapyschic scripts refer to personal feelings, fantasies, perceptions and interpretations of experiences and their embodiment. The individual interprets, appropriates and modifies cultural scripts combining them with intrapsychic scripts to create

interpersonal scripts that are lived out in sexual encounters. Partnered-relationships involve negotiation and modification across the personal scripts of the partners. All three levels of scripts influence the sexual practices and relationships that individuals may engage in.

Sexual Scripting Theory differs from cognitive behavioral and social influence theories in its understanding of the individual as a social actor who contributes to the creation of his or her own scripts out of the internal and external materials available. The processing of knowledge and attitudes – which is the focus of cognitive behavior theories -- is only one piece of the intrapsychic script and this script combines with social lives and cultural scripts to be experienced as interpersonal scripts in sexual interactions. Understanding the various scripts for sexual interactions and how individuals negotiate interpersonal scripts within the context of dominant cultural scripts and intrapsychic, subjective constructions of sexuality proved particularly useful in the Action Research project in Kenya that developed and tested Primary School Action for Better Health (PSABH), a school-based HIV intervention that shares characteristics with HP4RY<sup>42,43,53</sup>. Scripting Theory provided an approach to understanding and describing the dynamics of sexual interaction for Kenyan youth which youth, teachers, and other community members could comprehend and use to build activities to enhance critical thinking and modify those portions of sexual scripts that contributed to vulnerability to HIV infection.

In HP4RY, the use of Scripting Theory led to an in-depth understanding of sexual practices, processes and relationships of young men and women, how knowledge and attitudes are used within the various scripts, and how all of these interact with other social circumstances and processes. Using data collected at the beginning of HP4RY, Barnett and Maticka-Tyndale<sup>41</sup> elaborated and more completely specified the transactional script of sexual interaction for young men and women in Edo State using Scripting Theory. This provided a nuanced and gendered understanding of how men and women exercise their power within this script. Such an understanding facilitated identification of junctures in the transactional script where shifts



may be possible to 'safer' sexual practices. Barnett<sup>74</sup> also elaborated how sexual interactions among Junior Secondary School youth are part of a script of 'growing up' and becoming an adult, the association with knowledge and attitudes, and the ways this maturation script might be used to both counter early sexual activity and contribute to condom use for those who are already sexually active.

## Community AIDS Competence or Capacity

While Social Ecology Theory identifies local communities as the contexts for sexual activity and research on sexual practices related to HIV risk has confirmed the influence of community on such practices<sup>36,65,76</sup>, there are few theories that address how community influence is exerted. Catherine Campbell developed the frame-work of *AIDS Competent Communities* in response to the difficulties that young people had in actualizing the gains they had made in school-based HIV programming in their day-to-day lives<sup>21</sup>. It is a systematic conceptualization of aspects of social environments that facilitate or obstruct actions that reduce risk of HIV transmission. Campbell and colleagues<sup>70</sup> have identified six elements of community capacity that relate to how a community responds to HIV and AIDS and particularly community members' vulnerability to HIV infection:

- *Degree of accuracy and adequacy of knowledge related to HIV transmission and acquisition.*
- *Presence of critical thinking and awareness of how social and cultural factors either obstruct or facilitate prevention, treatment or care (e.g. gender norms, sexual scripts, power relations).*
- *Degree of solidarity and cohesiveness of the community in its commitment to addressing the threat posed by HIV and AIDS.*
- *Extent of empowerment, motivation, and confidence that it is possible to create and maintain conditions that facilitate beneficial actions and outcomes.*
- *The presence of social networks that support change and increasing facilitative (as opposed to obstructive) conditions.*

- *Accessibility of services and resources related to HIV prevention (e.g. youth friendly health services, VCT, school-based programming).*

Communities are located along a continuum based on these characteristics which individually and collectively identify areas for 'intervention work' to improve facilitation of individual risk-reduction. The concept of AIDS Competence or Capacity fits within the more general conceptual framework of Community Competence or Capacity<sup>77</sup> and has been used by non-government organizations (NGOs) working in community development to identify specific areas of focus in order to move a community toward a more facilitative position<sup>59,78,79</sup>.

In a post-hoc secondary analysis of data collected as part of the PSABH project in Kenya, Maticka-Tyndale and Tenkorang<sup>75</sup> applied the ACC framework to understanding youth capacity to use condoms. They found that ACC components significantly contributed to explaining condom use over and above the explanatory power of individual socio-demographic and cognitive influences. Their work supports the conclusion that the ACC theoretical framework captures influences on youth vulnerability that exist at the community level and exert an influence independent of what has been captured in cognitive-behavioral models, thus enhancing our understanding of community-level structures that influence vulnerability to or resistance against HIV infection.

Research in communities at the beginning of HP4RY identified where each community was located on the six AIDS Competency dimensions. Together with information about the sexual scripts of youth, this was brought back to communities and participatory strategies developed to enhance AIDS competency through a community-based mobilization initiative<sup>80</sup>.

## Theories Guiding Knowledge Translation and Intervention Delivery

### Action Research

Action Research is the methodological theory that guides the HP4RY project. It is grounded in the premise that knowledge transfer and exchange are

necessary components of the research process with researchers, community stakeholders and research participants each contributing to the understanding of research results and the programmatic and policy outcomes. Action research involves alternating cycles of research; translation and transfer of research findings to government, NGOs and civil society (e.g. parents, parent-teacher associations, school boards, faith-based and traditional leaders); and translation of knowledge gained through research into programmatic action (e.g., delivery of school- and/or community-based interventions) (see Figure 2)<sup>53,81,82</sup>. It insures that knowledge translation and collaborative partnerships are an integral part of the research process and contributes to local ownership of the programme and policy components of the Action Research process. Action Research does not stipulate specific data collection or analysis methods. These are selected based on the specific nature of the research questions being pursued. The focus of attention is, instead, on collaborative interpretation and translation of research results.

**Implementation Theory**

Increasing attention has turned to difficulties with delivering interventions ‘in the real world’ especially at a large enough scale to have an impact on the epidemic<sup>3, 4</sup>. Based on his review and synthesis of meta-analytic evidence, Noar concluded that researchers and intervention designers have a responsibility to keep

“translational concerns in mind, in order to increase the ability of ... interventions to ultimately be disseminated”<sup>2 (p. 353)</sup>. This philosophy has been integrated into the design and implementation of the HP4RY project. In the absence of an Implementation Theory, lessons learned from work on earlier interventions were applied when planning and developing HP4RY and particularly the two interventions – school-based and community-based – that it supports. Five principals were applied to maximize the possibility that the interventions could be implemented and sustained beyond the tenure of the project and potentially disseminated on a wide-scale.

The first principal is that the interventions are designed to fit the mandates, programmatic work, and infrastructures of existing institutions and organizations. Abiding by this principal led to consideration of which institutions and organizations could take responsibility for the interventions and what constraints this would place on the form and content of interventions. As part of project development, Family Life and HIV Education (FLHE), a programme already approved for delivery in Junior Secondary Schools across Nigeria and which the Edo State Ministry of Education was mandated to deliver, was identified as the foundation for the school-based initiative. FLHE is based on a knowledge-and-attitudes model for influencing sexual practices, incorporates an understanding of gender power in

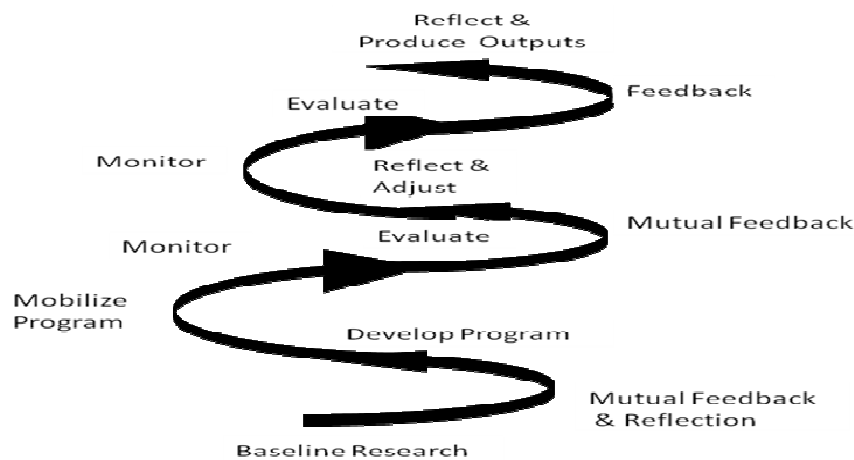


Figure 2: Action Research Process

the Nigerian context, addresses dominant traditions and cultural beliefs and practices that influence sexuality, and allows for local additions and modifications to make the programme responsive to circumstances in different states and regions of Nigeria. Evidence from research conducted as part of HP4RY about local vulnerabilities and sexual scripts was used to develop the local additions to the FLHE programme. To insure that the programme as delivered in Edo State was consistent with that delivered elsewhere in Nigeria, no other modifications or additions were made. For communities and the ACC model, the National Youth Service Corps (NYSC), a national programme supported by a training, deployment and support model that places new university graduates in organizations and communities for a year of service, was identified as the vehicle for intervention delivery. This insured that communities themselves, or local government areas, had access to 'staff' (NYSC members or Youth Corpers) to deliver the programme in the future. Consistent with the principal of using local infrastructures, training of Youth Corpers to implement the programme and guidelines for enhancing community AIDS Competency were designed to fit with the existing NYSC infrastructure and mode of operation.

The second principal is to insure that the local institutions that will carry the programmes forward are 'on side' and have the capacity for implementation. This was fostered through repeated meetings with representatives from both the Ministry of Education and the NYSC Directorate and through the use of the Action Research model that insured information was brought back to these organizations (as well as to other organizations and the schools and communities in which we were working) and soliciting their feedback and input. The Ministry of Education already had a commitment and mandate to expand delivery of FLHE in the state; however, while the NYSC Directorate expressed a strong interest in disseminating the community programme, we recognized that such a commitment would likely weaken once HP4RY was over and other priorities took precedence. Consequently, we regularly invited other local

organizations that deliver programmes in local villages and communities related to youth, sexuality, gender, or health, to meetings and workshops where research results and information about the interventions was shared, feedback was received, and interest was expressed in order to widen the circle of potential implementing organizations.

The third principal is to use local resources. It is tempting to develop an intervention that uses a wide array of resources such as films or videos, interactive computer programmes and games, posters, sports equipment, and provides youth with rewards that clearly identify them as engaged with the programme such as shirts, caps or bags. However, such resources add to the cost of the programme and reduce the likelihood that another organization or a local village or community in a resource-poor setting will be able to initiate and/or sustain it. The communities we worked with are rural, with limited access to electricity and, for some, even cell phone reception. Schools typically lacked sufficient desks, chairs, paper and pencils for all of their students, and access to secure facilities where equipment could be stored was, at best, limited. Consequently, both the school and the community programming used only the resources directly available in the village or that community members or schools could arrange to bring in from other villages or the local government area office. Interventions were extremely 'low tech' and minimally resourced with teachers, Youth Corpers, and peer leaders trained and encouraged to use their imagination, local creativity and resources and to build local networks to facilitate access and use of whatever resources were available.

The fourth principal is to develop local capacity. This was realized by building resident capacity to continue the programme. In schools this meant developing a strong peer-educator component in addition to training both government employed teachers and those employed by local communities to supplement the teaching ranks. Schools have few teachers but many students and the teachers are more likely to transfer out of schools than students are, especially if new students are regularly brought up through the ranks. Community members are even more stable

and the community programme built core groups of youth, connected to the existing leadership networks, and built capacity in these to continue working on raising AIDS Competence. Finally, evaluation of the interventions was conducted in the 'real world' of schools and communities. All students participated and the community programming was available to all residents in the community. The training, support, and monitoring were those that would be available under everyday operations and no special measures were taken to manage or control operations.

## Conclusions

HP4RY is an example of a multi-level research-intervention-evaluation-capacity building project that combines interventions and theories to reach several levels of influence on youth vulnerability and risk. It is built on theoretical frameworks that take into consideration multiple levels of influence from the individual to the community and to state institutions such as the NYSC Directorate and the State Ministry of Education. It incorporates elements of the theoretical frameworks that dominate in the HIV prevention intervention field, including developing accurate knowledge and supportive attitudes, awareness of the seriousness and risks of AIDS, building and working with peer networks and leaders, active/participatory learning, and consideration of existing norms for gender relations and sexual practices. By working in an Action Research model it has built alliances with communities and with State organizations and benefited from their experience and insights while returning what was learned in research to them. The attention paid to the need to build interventions so that they can be sustained and implemented beyond the tenure of funding for the HP4RY project, has worked to maximize the likelihood that they will be implemented and sustained beyond the tenure of the project. The HP4RY project is an example of the creative melding of theories, conceptual frameworks and lessons learned from prior work within an Action Research model to address the vulnerability of youth living in rural communities to HIV.

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