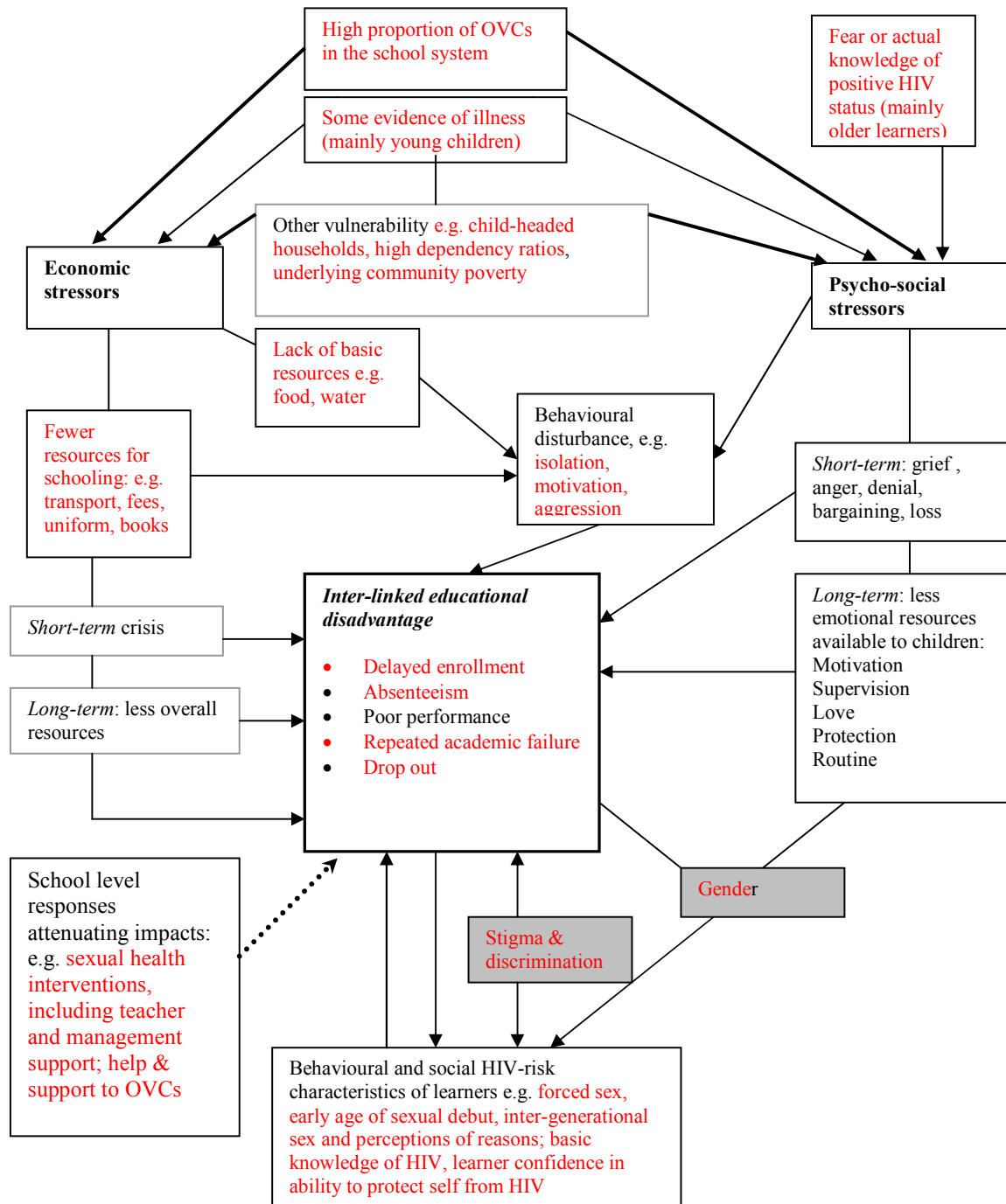


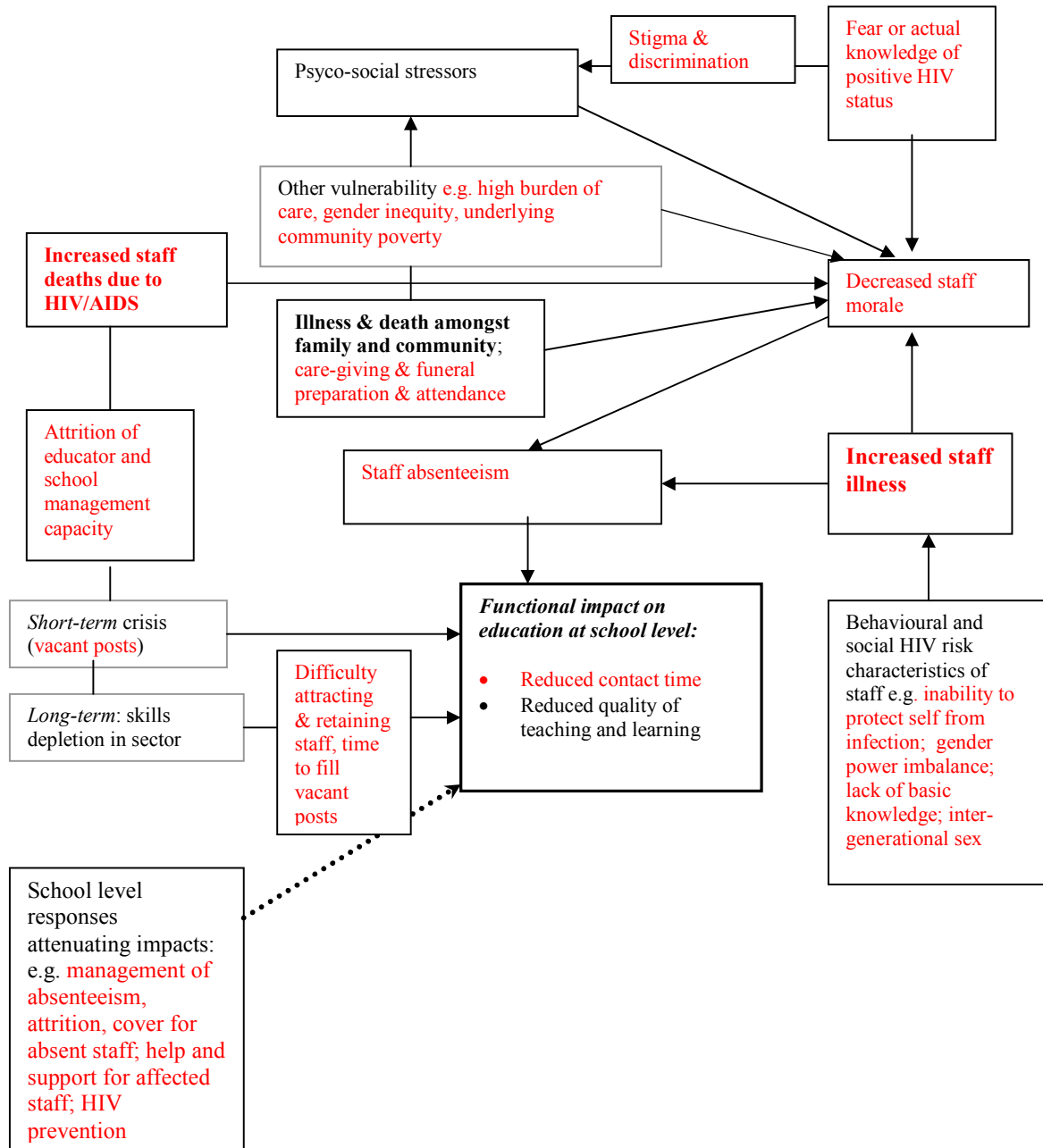
Appendices

Annex 1a: Conceptual framework for measurement and monitoring of educational disadvantage at school level related to "demand side impacts" i.e. due to increasing numbers of affected and infected children in the system



Note: Text in red in the diagram indicates attributes directly or indirectly measured in this study

Annex 1b: Conceptual framework for measurement and monitoring of functional impacts at school level related to "supply- side impacts" i.e. impacts due to increasing numbers of affected and infected staff in the system



Note: Text in red in the diagram indicates attributes directly or indirectly measured in this study.

Annex 2: Literature Review



Output 1: Impact of HIV/AIDS on Education at School Level: A Review and Synthesis of Literature

Economic Impact of the HIV/AIDS Pandemic and its Impact on Governance

Project funded by the Joint Centre for Political and Economic Studies

Project title:

Quantifying Effects of Illness and Death on Education at School Level: Implications for HIV/AIDS responses

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Impact of HIV/AIDS on Education at School Level: A Review and Synthesis of the Literature

Background

This review forms part of the project “Quantifying Effects of Illness and Death on Education at School Level: Implications for HIV/AIDS responses”. The project was funded by DIFID and administered by the Joint Centre for Political and Economic Studies. In summary, the main aims of the project are

- To quantify and describe the strengths, weaknesses and areas of vulnerability of schools in functional areas in which HIV/AIDS is likely to impact,
- To quantify currently experienced level of impacts of HIV/AIDS at local level; to describe current responses and priorities for response and
- To identify local level sites and baseline data which can be used for ongoing surveillance of behavioural and other markers of HIV/AIDS risk and impact.

Further details of the sub-issues to be addressed in the research are available in the technical proposal.

A preliminary scan of available quantitative and qualitative studies, and the discursive literature showed multiple ways in which education systems are thought to be affected by the HIV/AIDS epidemic. However, an overarching conceptual model which describes how the various impacts may be inter-related to one another, and to educational outcomes was lacking.

The greatest impact of the HIV epidemic on learners while they are in South Africa’s schools will be through impacts on their families and households. Dropout or failure to enroll is the grossest manifestation of impacts of orphanhood on education. Attendance, learner performance and school completion may be affected. However, impacts seem to vary widely, depending on social, economic and cultural circumstances. Orphans will be the most obvious affected group, but other children may be affected when their households take in orphans or provide other support to family or community members. Orphans’ schooling can be affected through economic stresses on their households, psychological impacts that are a result of changes in family structure and functions that involve new responsibilities to care for the sick, the elderly or siblings, as well as loss of parental guidance and interest in children’s education. Contributing factors that have been proposed include erratic attendance due to household circumstances; poorer concentration due to hunger, household demands and psychological impacts; and emotional/behavioural disturbances. Commentators have noted that effects of orphanhood on children may only manifest after many years and could have important social consequences in view of the scale of orphanhood in many communities. While HIV/AIDS impacts on learners will be substantial, it has been suggested that the

epidemic will also affect the capacity of the Education System to deliver Education, through impacts on educators and other employees. For example, continuous or intermittent absenteeism due to HIV/AIDS may have severe repercussions on contact time and the ability of the system to continue to deliver quality education. Critical is the ability at the local level to manage absenteeism and staff attrition in the most effective manner possible.

Current quantitative information concerning HIV/AIDS and how it affects child-wellbeing, so that children can attend school, tends to be segmented. There is some information on various aspects of HIV/AIDS impacts, such as orphaning rates, or preparedness of schools to respond to the epidemic, but this is rarely brought together to form a clear overall perspective on how education systems can best respond to support vulnerable children and teachers in families and communities affected by AIDS.

We propose a draft conceptual framework in Annex 1A and Annex 1B, which give a diagrammatic representation of “demand” side and “supply” side contributing factors respectively. The framework provides postulated linkages between the various factors. We have used this draft framework to guide the identification of relevant studies and the extraction of data for the review as described below.

Aim

1. To identify and synthesis findings from previous quantitative studies exploring HIV/AIDS impacts and response capacity on Education at the local level.
2. To identify measurement considerations in understanding HIV/AIDS impacts on Education at the local level.
3. To identify the significant factors associated with keeping children in school in communities affected by HIV/AIDS
4. To identify important research questions to be addressed in the future.

Inclusion criteria

Studies to be included in the review needed to meet the following criteria:

- Collected quantitative data
- Clearly described sampling method and sample size and data collection instruments.
- Reported one or more educational outcome variables (enrollment, attendance, repetition educational performance, teaching quality, contact time).
- Reported one or more of the proxy factors for HIV/AIDS at local level (parental, teacher or child illness or death; attrition, absenteeism, illness and death amongst household members).
- Reported one or more of the HIV/AIDS related factors affecting educational supply or demand

(see Table 1).

- Conducted within the past ten years (between 1993 and 2003).
- Conducted in sub-Saharan Africa.

Under these inclusion criteria, studies which only looked at HIV knowledge of young people, without relating knowledge to educational outcomes were specifically excluded.

Factors assessed in the Review

Table 1 shows the list of possible factors related to functional impacts of HIV/AIDS at school level included in the review.^a Included studies needed to include at least one of the factors from the groups marked in bold text in the Table below. Data on the other indicators were extracted where these had been collected and presented.

Table 1: List of factors to be assessed in the review

<i>Area of assessment</i>	Types of indicators
<i>Possible indications of HIV/AIDS at local level</i>	Orphan status (maternal, paternal and double orphans) Illness amongst children and teachers Children and teachers with illness and death amongst household members, including primary caregivers of children Teacher absenteeism Teacher death rates Teacher attrition
<i>Functional Educational outcomes</i>	Enrollment Attendance Performance Drop out Pass rates/ school achievement Contact time Quality of teaching and learning
<i>Psychosocial factors (learners & teachers)</i>	Emotional resources Coping and adaptive behaviours
<i>Child development indicators³⁴</i>	Growth, nutrition, health status, developmental stage for age, lifeskills, safety, perceptions of peace in society, perceived family harmony, degree to which children are 'looked down on' by others
<i>Household resources of learners</i>	Socio-economic status Child nutritional and health status Household expenditure on schooling Household reliance on child labour ^b Age and relationship of household head

^a Some possible casual links between these factors are shown in Annex 1A and Annex 1B.

^b Reliance on child labour may be for domestic chores, care of sick relatives, care of younger siblings

<i>Response capacity of schools</i>	Child migration between schools and areas, sibling dispersal
	Dependency ratios
	Social capital
	Community socio-economic characteristics
	Sexual health education and interventions
	Help and support to OVCs
	Social capital
	Stigma toward OVCs and poor children
	Numbers of vacant posts
	Time to fill vacant posts
	Staff skills and capacity
	Stigma
	Absenteeism monitoring and management
Staff morale	
<i>Susceptibility of children and staff to HIV infection (including community resources and coping capacity)</i>	Knowledge, beliefs and practices concerning HIV/AIDS
	Exposure to Prevention efforts, sexual health education and services
	Sexual behavior (Age of sexual debut; forced sex, intergenerational sex, transactional sex)
	Positive lifestyle and aspiration
	Social capital
	Community socio-economic characteristics
	Help and support to the vulnerable
Stigma and discrimination	

Types of studies to be included

The review included the following:

- national population-based surveys
- cross-sectional analytic and cross-sectional descriptive studies
- longitudinal studies
- school-based surveys
- household surveys
- impact studies within the education system, where data has been collected at a local level

Participants included

Males and females of school going age (7-18 years) for demand-side impacts.

Males and females employed within the education sector for supply-side impacts.

Schools and communities.

Results of the review

Description of studies included in the review

Altogether 17 studies met the inclusion criteria and were included in the review. There were 12 household surveys and five studies conducted in school settings.

Of the household surveys, one was a secondary analysis of national household survey datasets. Six of the household studies specifically focused on AIDS affected households or households caring for orphans, with the remainder examining households in the general population. The five studies in school settings were conducted by two research teams, one research team reporting on three studies and the other on two studies.

Studies were conducted in around 9 countries in Africa. Countries in which studies were located included: South Africa (5 studies), Uganda (3 studies), Tanzania (2 studies), Kenya (1 study), Zambia (1 study), Namibia (1 study), Zimbabwe (1 study), Botswana (1 study), Malawi (1 study) and a collation of household data across 28 countries (1 study).

We are still trying to obtain a full report for one study (Kamali A, et al 1996¹) which appears on the basis of the abstract, to meet the inclusion criteria, but we have not yet been able to obtain the study report.

Examples of studies excluded from the review

Several studies had to be excluded because they did not collect quantitative information on educational outcomes . For example, Ayiko 1998²; Richter L and Swart Kruger J. 1996³ ;Jewkes R et al 2001⁴, Kelly et al 2000.⁵ various LoveLife research surveys⁶ , ^{7,8} and Peltzer 1998⁹. One study was excluded because the study reports failed to provide sufficient information on sampling, methods or analysis to allow an appraisal against the inclusion criteria. (Mutangadura 2000)¹⁰

Table 2a: Characteristics of Included Studies

Study id	Study design & Country	Sample size	Stratification parameters Sampling method and selection criteria	Informants and data collection tools	Measures
(A) HOUSEHOLD SURVEYS					
Ainsworth et al 2002 ¹¹	Secondary analysis of household survey datasets from 28 countries	39 Datasets from 28 countries were analysed, with 5000-23 500 children aged 7-14 years	39 nationally representative household survey datasets were obtained dating from 1992-2000, selection of these datasets based on their having collected data on orphan status, enrollment and household living standards.	Existing household surveys (DHS and LSMS)	Enrollment Orphan status (maternal, paternal and both parent orphans) Wealth Gender Relationship to head of household (where available)
Steinberg et al 2002 ¹²	Cross-sectional household survey across 4 provinces of South Africa	728 households containing 4821 household members, including 1500 children under the age of 15 years.	Rural and urban sites selected on basis of active hbc organizations Households sampled randomly from lists of all households served by hbc organizations in the areas. No control group.	Structured interviews.	Enrollment School drop out child mobility due to ill health in the household household socio-economic status child experiences of hunger support received by households
Gilborn et al, 2001 ¹³	Baseline of Quasi-experimental study; Uganda	AIDS affected households and orphan-caring households; 353 HIV positive parents; 495 children of LWA, 233 orphans; 326 guardians	Gender Age (5-12; 13-17) AIDS affected households recruited through HBC organizations; included only those with children 5-17 years. All eligible hh were included.	Semi-structured interviews with parents, guardians, young orphans and older orphans.	Enrollment, drop out; school attendance and performance Health status, socio-economic status, psychological concerns, wills and property, of guardians, Chores and work, health, hunger, material well being, stigma and discrimination
Rutenberg et al 2001 ¹⁴	Longitudinal panel study, KZN, South Africa	2007 households containing 3 770 adolescents.	Modified multi-stage cluster approach to identify households. Every adolescent aged 14-22years interviewed ^c .	Structured interview with head of household or proxy. Structured individual interviews with adolescents. Street intercept interviews with community members	Pace and progress through school, work opportunities, educational opportunities, child-bearing, quality of schooling experience Sexual health outcomes, STDs, unsafe pregnancy, abortion, time use, exposure to LifeSkills programme, condom knowledge, attitude and use, connectedness to school and community, reproductive history.

^c An urban and a rural site were selected. Within each site, 120 EAs were randomly selected. Each EA split into 4, and one segment selected randomly. Every household in the segment was included for interview of all adolescents living there.

				Observational checklists	
Booyesen et al 2001 ¹⁵	Longitudinal household study, Free State, South Africa	353 households in all waves ,attrition rate 12.5%	Purposive sampling through NGO network & population based sampling of controls checking for chronic illness	Household interviews	School attendance Socio-demographic characteristics of households Orphan status
Ainsworth 2000 ^{16, 17}	Longitudinal household study households, conducted 1991-1994, supplemented by longitudinal survey of primary schools. North Western Tanzania (Mwanza)	553 households ^d including 1213 children aged 4-14 years. 62 primary schools (comprising all schools in the area)	Sample stratification based on agro-climatic features, levels of adult mortality, indicators of elevated adult illness or mortality.	Household interviews in four sweeps at 6-7 month intervals. Community leader survey. Primary school survey.	Timing of enrollment Hours in school in the preceding 7 days 2 measures of adult mortality (1) child is an orphan at time of entry to study (2) recent adult death in household (6-7 months) Household poverty (asset register) Other socio-demographic characteristics Measures of school quality: (Student:teacher ratio; Crowding; Expenditure on text books and other school supplies; Fees and fee exemptions)
Nampanya Serpell, 1999 ¹⁸	Retrospective cohort study; Zambia	936 children after AIDS related parental death; 324 caregiving families	Urban/ rural Gender Age Details of sampling still to be obtained from the author.	Structured interviews with household members, including children	Enrollment, drop out; Health; Nutrition; Emotional status. Explanatory factors: Socio-economic status of family; age; sibling dispersion; adult:child ratio
Elmore Meegan 1999 ^{19, 20}	Kenya, ICROSS project areas Case control study	A comparison study of 646 children orphaned by AIDS (age 7-18) and 1,239 matched controls.	AIDS orphans compared to controls (some of whom were orphans)	Methods of data collection are unclear from the documentation.	School attendance and performance Sickness Days engaged in unpaid work Living/care giving circumstances Other socio-demographic variables
Sengendo and Nambi 1997 ²¹	Rakai district, Uganda Cross sectional analytic study	193 orphaned children	Primary caregiver at home Age Children aged 6-20 years enrolled in a special support programme. Purposive sampling to obtain representation from range of living circumstances.	In-depth interviews with orphaned children, guardians and teachers to assess school performance.	Enrollment, drop out, absenteeism Main caregiver at home, depression, aspiration,. (school performance was measured through interviews with teachers, but these results are not reported on).

^d Of the 816 households included in the sample, 757 households (93%) completed all sweeps of data collection, and 553 of these had children in the target age band of 7-14 years.

Urassa M et al 1997 ²²	Tanzania; 1995		Household screening; all households containing orphans in one rural village selected to participate . 169 households interviewed, containing 300 orphans	Orphans vs non-orphans	School attendance Household socio-economic status Caregivers Support outside the home Recent illness Migration at follow up.
Richter L 1996 ²³	South Africa, 3 cities Cross-sectional analytic study.	864 youth aged 16-20 years	were selected, and households randomly selected from maps of the areas. Youth Aged 16-20 years	Interviewer administered questionnaires by same sex interviewers	Educational level, intentions to complete secondary and tertiary education, ever failed a grade, interrupted schooling, Risk taking behaviour, sexual behaviour, pregnancy, childbearing, self reports of sSTDs.
Birth to Twenty, Mandelas Children ^{24, 25}	Johannesburg, South Africa	Longitudinal study of children	Children born during a seven week period in 1990, in the metropolitan area of Soweto-Johannesburg.	Structured questionnaires Growth and development indicators Psychometric tests	Many factors related to school enrollment, child development and living circumstances of children
(B) SCHOOL BASED SURVEYS					
Kinghorn et al 2002b ²⁶	Cross-sectional survey of schools, Zimbabwe	250 schools comprising 187 primary schools and 63 secondary schools. Sub sample of 1008 secondary school pupils (For 3).	Stratified random sample of schools proportional to enrollment . Strata used were education region, level of school and urban/rural. A sub-sample of secondary schools was randomly selected for data collection from Form 3 pupils.	Interviewer-administered questionnaires for heads and teachers. Self administered questionnaires completed by students.	School attendance, drop out Orphanhood, hunger, sexual risk behaviour, knowledge of HIV, stigma and discrimination, help and support available to learners and staff. Teacher absenteeism, attrition, Management and school functioning.
Kinghorn et al 2002a ²⁷	Cross-sectional survey of schools, Namibia	184 schools participated. Learner questionnaires were completed by around 710 grade 8 pupils from 50 schools.	Stratified random sample of schools proportional to enrollment . Strata used were education region, level of school and urban/rural. Where schools were too remote they were substituted from schools in the same stratum. A sub-sample of secondary schools was randomly selected for data collection from Grade 8 learners.	Interviewer-administered questionnaires for heads and teachers. Self administered questionnaires completed by learners.	School attendance, drop out Orphanhood, hunger, sexual risk behaviour, knowledge of HIV, stigma and discrimination, help and support available to learners and staff. Teacher absenteeism, attrition, Management and school functioning.
Bennell	Cross-sectional	9 Primary schools	Schools randomly selected from 2	Semi-structured	Student absenteeism in past month, repetition and

2002a ²⁸	school survey Botswana	10 Secondary schools 68 teachers interviewed 383 secondary students	rural and 2 urban administrative areas.	interviews Sub-sample of teachers for interview Self completed questionnaire for 40 students from last two years of primary school and each year of secondary school	ever stopped attending AIDS related sickness, Rates of orphaning Students knowledge of HIV/AIDS Living circumstances Perceptions of sexual harassment by teachers
Bennell 2002b ²⁹	Malawi		As above	As above, and teacher self completed questionnaires eliciting views on HIV/AIDS through 5-point rating scales.	As above
Bennell 2002c ³⁰	Uganda		As above	As above.	As above

Summary of findings

Orphans were shown to have lower enrollment than other children fairly consistently across the studies reviewed. The magnitude of the difference varied across the studies. Almost all studies showed the greatest difference when considering older orphans, who seem particularly vulnerable to school drop out.^e One household survey in South Africa did not find differences between drop out between older and younger age groups of orphans, but this analysis was restricted to children under 15 years.¹² Another South African study showed a greater difference in enrollment between affected and unaffected households for younger age groups than for older age groups. This may have been due to delayed enrollment, rather than school drop out. The effect was particularly marked in the urban site but not the rural site. Most studies showed girl orphans to be disproportionately affected. In most cases these tended to mirror underlying gender differentials in school enrollment in the school age population. Where there was no underlying gender differential, girl orphans were still disproportionately affected in some most studies.

Delayed enrollment was marked in households with an adult death, particularly death of an adult female¹⁶

Household wealth was most consistently measured across the studies reviewed, and most consistently shown to be associated with school enrollment, both independently of orphan status and together with orphaning.^f, 18

^e Differences also seemed more apparent in studies from countries with higher background levels of enrollment, but differences between the studies make comparisons difficult.

^f The interactions between orphan status and household poverty is complex particularly in the situation of AIDS orphans who may have been made poor by AIDS impacts on the household. In these situations controlling for household poverty in seeking to understand independent effects of orphaning and of HIV/AIDS may lead to 'over controlling', missing AIDS effects on schooling bound up as it is with household poverty.

The presence of an ill adult in the household has been shown in one study to have deleterious effects of enrollment of older children, and reduced day to day attendance compared to non-affected children.¹³

Orphans and foster children were found to be around twice as mobile as other children in one study (31% of orphans and foster children vs 16% of non orphans had moved to another household in the previous two years).

Table 3: Main Findings of Included Studies showing relationship between educational outcomes and HIV/AIDS related factors

Study id	Main findings	Limitations and discussion points
Ainsworth 2002	Orphans were found in both poor and rich households across countries, but in Zimbabwe and South Africa, poorer households were more likely to have orphans in them than the richer households. The extent of orphan under-enrollment relative to other children varied widely across the countries. In SA, no differences in enrollment were found. Benin and Kenya showed lower enrollment for all orphans. Burkino Fasa and Hiati showed lower enrollment for some orphans. Overall, girl orphans educational disparities seemed to mirror existing gender imbalances i.e. in 21 of the 28 countries, there was a similar gender gap in enrollment for orphans as for other children. Dissaggregating data by household wealth did not alter gender gaps.	The authors point out that a child's schooling may be disrupted before a parent dies.. Data do suggest that orphaning per se is not a good targeting criterion for interventions aiming at raising enrollment.
Steinberg et al 2002	Around 22% of children in these AIDS affected households were already maternal orphans, with a disproportionate number in the older age group (6-15 years) compared to younger. Around 9% of girls aged 7-15 years in the affected households had dropped out of school and 5% of boys. Lack of money was most commonly mentioned reason for the drop out. A further 2% of children of school age had not yet enrolled in school. A further 163 children were not included in the household register and were reported to have been sent away because of illness in the household. These children most commonly had gone to live with grandparents. Most boys who had been sent away were believed to still be in school, but for girls, around ½ were not in school or it was not known whether or not they were in school. There were no marked differences between older and younger children.	Determinants of schooling status amongst children from these AIDS affected households have not been reported. Factors determining schooling status, including household wealth, type of support received, sources of support and other characteristics are able to be explored using the available data.
Gilborn et al, 2001	The majority of children from these AIDS affected households were enrolled in school (92% overall). However, for older children in households with an adult member currently ill, enrollment was lower than for older orphans. (89% vs 96%) and day to day attendance was also lower (20% do not attend school regularly or all the time, compared to 10% of older orphans). Almost 1/3 of children with ill parents reported school performance had declined since parental illness, and 26% that attendance declined. Older two parent orphans reported that school attendance increased after parental death, when the children moved in with a guardian. Older girl orphans were less likely to be enrolled than older boy orphans (NS). Stigma and discrimination – around ¼ of adults believed that the children were treated differently because of having AIDS in the family, and around 6-10% of all children reported enacted stigma or discrimination. Over 1/3 of children reported not getting enough to eat, with orphans slightly more likely than children in households with ill members not getting enough to eat (37% vs 34%).	The study aims to assess the impact of interventions on child-wellbeing, including educational outcomes. Interventions to be tested include succession planning (before parental death) and secondly, orphan support (after parental death). The baseline findings reflect children in crisis situations, and long term adjustment to the situation cannot be inferred. Data from successive data sweeps (2000 and 2001) are so far unavailable, but attempts are still being made to obtain these.
Rutenberg et al 2001	Papers and analysis planned, but findings not yet available.	
Booyens et al	Almost 6% of children aged 6-14 years were not attending school in affected households compared to around 1% in control households. Around 13% of children aged 14-18 years from affected households were not in school compared to around 10% of children from control	The authors report that around 12% of affected households were lost to follow up, mainly due to household dissolution and migration. School status of children in these households

	households. A greater proportion of younger children from affected households were out of school in Welkom and a greater proportion of older children from affected households were out of school in Qwaqwa (rural).	likely to be vulnerable, thus impacts may be an underestimate.
Ainsworth 2000	<p>Enrollment of young children (7-10 years) was delayed in households with an adult death, whereas enrollment of older children (11-14 years) was maintained. Ie. No evidence of drop out. Particularly the case where the adult death was female: Enrollment of children whose households experienced an adult female death in the past 12 months, was half that of those experiencing no female deaths (18% vs 39%).</p> <p>Maternal orphan enrollment delayed compared to other children.</p> <p>Children living with grandparents as head of household equally likely to be enrolled as children living with a parent. However children living with other relatives less likely to be enrolled.</p> <p>Participation rates of children in caregiving and other activities unaffected by orphan status.</p> <p>Enrollment of orphans lower than non-orphans, even when taking household poverty into account.</p> <p>Enrollment affected by poverty of households independent of AIDS, with children from poor households having around 1/3 lower enrollments than children from non-poor hhs.</p> <p>Proportion of children in surrounding schools who have to share a textbook (indicator of overcrowding) was significantly associated with lower enrollment amongst younger children but not older children.</p> <p>The further away a secondary school, the lower the rates of primary enrollment</p>	<p>Primary school only. Background levels of enrollment very low (NER=48% in 1997), and high rates of overage enrollment. Barriers to enrollment, other than adult death, such as overcrowding of schools, child labour needed at home and limited access to secondary school apply to all children, not just orphans. Situation in countries with higher background levels of enrollment may be very different. Seems to exacerbate existing problems, rather than create new ones.</p> <p>Authors compared children before and after an adult death. There may be some mixing of AIDS affects, as childs vulnerability begins before adult death. No discussion of adult illness.</p> <p>The analysis excluded households who did not complete all data sweeps over the 2-3 year period. Around 7% of households had dropped out, some of these may have dissolved, arguably those households containing the most vulnerable children, leading to an underestimate of educational effects amongst the sample overall.</p> <p>Analysis controlled for poverty and other household characteristics when exploring associations between orphan status and enrollment, and associations that had been present in bivariate tabulations disappeared. This seems to be a case of over-controlling for confounding, because the poverty of the household may not be a confounder, but a link in the casual pathway.</p> <p>Many orphan households were already receiving assistance in schooling, possibly dampening down differences in enrollment that might otherwise have been observed.</p>
Nampanya Serpell, 1999	<p>In urban sample, household poverty was the most important predictor of school drop out.</p> <p>In rural sample, age of orphan was the most important predictor, with older orphans more likely to drop out of school</p> <p>In the urban sample, the most important factor associated with emotional well being was sibling dispersal. In the rural sample, high numbers of adults in the caregiving family was most significantly associated with emotional distress.</p>	Used logistic regression to explore factors related to educational continuity.
Elmore Meegan 1999	<p>Around 98% of control children were in school compared to 48% of AIDS orphans.</p> <p>43% of the orphans in school showed decline in performance compared to 4.6% of controls.</p> <p>More girls dropped out of school than boys in the 12 months following a parents death (56%</p>	Some of the controls were orphans from other causes ; around 10% were double orphans. This would have been expected to have led to dilution of effects, but differences

	vs 47%)	between the cases and controls are still very marked. Selection of controls and cases not well described. Measures of school performance are not described. Methods of data collection are not clear. Assumed to be household interviews in conjunction with school record reviews but this is not stated.
Sengendo and Nambi 1997	Educational continuity was associated with living with a surviving parent; those fostered by grandparents had the least chance of continuing education, but this was true even if parents hadn't died if grandparent was primary caregiver. (Around 21% of children continued their education without disruption following parental death). Older children experienced slightly more disruption to schooling than younger children at the time of parental illness and death and subsequently. (overall, 21% lost school time, 12% left school, 29% were too young to tell, 19% said education was not disrupted).	Sampling was purposive. Children selected were under the care of a special programme, and therefore may have been inherently more needy or poorer than the average child; also may have been better supported than the average child. Can't extrapolate to all orphaned children, but differences between groups of children are informative. The authors failed to report on school performance, although this data were collected.
Urassa et al 1997	Lower enrollment amongst orphans than foster children, and lower enrollment amongst foster children compared to those living with both parents. However this is only evident in the older age group (aged 15-17 years). Enrollment of orphans and foster children compared to children being fostered while parents are alive was not shown. Disaggregation by gender revealed that for boys, both drop out and enrollment were lower amongst orphans and foster children, compared to those living with both parents, and for girls, enrollment was lower, but not drop out. Orphans and foster children were more mobile than other children. During two years of follow up, 30% of orphans and 32% of foster children present at baseline had moved to another household, compared to 16% of other children. In the baseline census amongst 10 015 children, overall 8.9% of children (<18 years) were orphaned, with older children disproportionately affected (18% at 15-18 years). 2.5% were maternal orphans, and 5.5% paternal orphans. A further 5% of children had absent mothers, 17% had absent fathers and 12.2% had both parents absent. Child fostering was common, with 34% of children not living with one or both biological parents.	Non-response rate was 51%; authors suggest this is because child had moved since baseline census, or caregiver refused to participate; The reporting of results it is not clear where the data on 1241 children came from, in particular, if the children living with parents are those in orphan-receiving households, or where they are from.
Richter L 1996	A lower percentage of girls were enrolled in school compared to boys (80% vs 89%). >99% of the sample intended completing secondary school. More boys reported having failed a year (59% vs 45%), while fewer boys reported having had their schooling interrupted (21% vs 36%). Around 75% of the sample reported having had intercourse, although fewer than 1/2 were currently sexually active. Around 1/2 of all young people reported >1 partner in the past 6 months. Around 66% had received sexual health education. Around a third of young people reported an experience of forced sex.	Analysis of relationships between educational outcome variables and HIV/AIDS risk behaviour are unavailable.

<p>Birth to Twenty, Mandela's Children</p>	<p>Numerous papers have been written on aspects of this study, but few papers on children's schooling. This data is still being sought from the study authors.</p>	
<p>Kinghorn et al 2002a</p>	<p>Zimbabwe: 5% of primary school children and 10% of o level school children were double orphans. Clustering of impacts within schools was noted: Heads estimates of children whose mother had died ranged from 0,2% of children in the school to 25% of children in the school. Teachers estimates of maternal orphans ranged from 0 to 38% of children in the school (average across schools around 7%).</p> <p>83% of both heads and teachers strongly agreed with the statement that being orphaned has major negative impact on child's school performance. Children whose mother has died were slightly more likely to report household chores or caregiving activities associated with school absence than those whose mothers are still alive (24% compared to 19%)</p> <p>Many pupils (58%) knew of fellow pupils who had dropped out because of family death. Some 23% (n=57) of teachers believed that children in families affected by HIV/AIDS were treated differently from other children and a further 17% said they did not know whether or not these children were treated differently.</p> <p>Some 23% of children reported that families affected by HIV/AIDS are treated badly because of HIV/AIDS, 38% said families were not treated badly, and a further 39% said they did not know if these families were treated badly</p> <p>Around 2% of teachers had died in the past two years.</p>	<p>Limitations in school based data, in not being able to capture the most vulnerable children who may have already dropped out. Attempts were made to overcome this by asking proxy responses on teachers and pupils knowledge of children who have dropped out.</p> <p>Reports predominantly univariate and bivariate tabulations. Very low response on some questions, eg heads reports on teacher absenteeism and ill health. (perhaps a better source would be the pupils)</p>
<p>Kinghorn et al 2002b</p>	<p>Namibia: The survey completed by learners indicated that around 8.5% of children in the sample are double orphans. Just under 1/2 (44%) of maternal orphans are double orphans. Some 46% of teachers said that performance drastically declines if a child is orphaned, and a further 41% said that performance declines somewhat. There were no marked differences between teachers perceptions at different school levels.</p> <p>Maternal orphans were slightly more likely to report household chores or caregiving activities associated with school absence than those whose mothers are still alive - 50% compared to 38%. Children living with grandparents also showed an elevated risk of absenteeism due to household chores (47%).</p> <p>Some 9% (n=17) of teachers believed that children in families affected by HIV/AIDS were treated differently from other children and a further 40% said they did not know whether or not these children were treated differently. A 1/2 of all teachers did not believe that these children would be treated differently from other children.</p> <p>Overall, around 15% of the current staff complement had left the sampled schools over the</p>	<p>A higher than expected prevalence of orphanhood was reported by surveyed learners, which is not able to be explained. Timing of parental death was not measured so there are no measures of orphan incidence.</p>

	preceding 2 years. Death of staff members accounted for 21% of all attrition. The death rate over 2 years was 3% overall, with a slightly higher death rate (4%) observed for schools in the North.	
Bennell 2002a	Botswana: double orphans in both primary and secondary schools appeared to have lower rates of absenteeism in the past month than non-orphans in the surveyed schools (note that the number in each cell are not presented). Other factors that lead to lost school time were not explored.	Major flaws in the presentation of data which makes interpretation difficult. Non response is not described. Authors do not present numbers in many cases these can be inferred from sample size, but can be misleading when percentages and conclusions drawn are based on small numbers. No tests of significance are presented. Very few analytic techniques employed, so that the relationship between variables is not explored.
Bennell 2002b	Malawi: In primary schools, past month absenteeism for girl double orphans was 61% compared to 47% for non orphans. There was no difference in absenteeism between boys on orphan status. In secondary schools, differences were marked for both boys and girls, with 55% of girl orphans compared to 33% non-orphans and 46% boy orphans compared to 32% non orphans experiencing absenteeism in the past month.	As above. High background levels of absenteeism.
Bennell 2002c	Uganda: In primary school, absenteeism was lower amongst orphans, but not in secondary schools (not mentioned); amongst secondary double orphans was 79%, compared to 52% amongst non-orphaned children.	As above.

Measurement considerations in understanding HIV/AIDS impacts at school level

The literature reviewed shows many important considerations that need to be taken into account in attempts to measure HIV/AIDS impacts at school level.

1. Respondent/unit of analysis

1.1 The unit of analysis in most of the studies reviewed is usually the individual in a household that is categorized as either affected or unaffected. Affected households are defined in some studies as households where an adult death has recently occurred. In other studies, the individual who has lost a parent is classified as affected, with those children who have live parents, being not affected. Comparisons are made between the groups.

- This kind of analysis is not necessarily helpful in locating school or community level characteristics that contribute to educational outcomes. For example, quality of schooling provision, teacher absenteeism, contact time, crowding have not been widely measured (except Ainsworth 2000). These factors may confound the association being explored in ways that are hard to predict.
- In many studies reviewed, because of this individual-centred approach, there is probably misclassification of 'exposure', such that many children in receiving households, whose education may also be compromised by virtue of having more children in the household, are classified as 'unaffected'. This would lead to a dampening down of any visible effects of HIV/AIDS on educational outcomes.

1.2 Surprisingly few studies exploring HIV/AIDS issues and educational outcomes have thus far been conducted at school level. School-based surveys are subject to inherent biases in excluding the most vulnerable children, who have already dropped out of school, or never enrolled. Some studies (Kinghorn et al 2002) have tried to deal with this by asking school informants for estimates of these effects, but whether teachers, heads and fellow pupils are reliable informants in this regard is unknown. Existing school based studies have not dealt with clustering of effects from class-based sampling, for example, and no overarching conceptual model to guide exploration of associations between indicators has been reported. Outcome measures such as attendance, repetition and drop out amongst existing enrollees are important in these studies and may help policy makers and planners understand existing vulnerability in the population they serve, prior to children dropping out of school. Arguably school-based studies would be useful to inform education sector responses, rather than household surveys alone.

2 Measurement of educational outcomes

- 2.2 Enrollment is the most commonly measured educational outcome in the included studies. Enrollment is critically important but it may be insufficiently nuanced to reflect educational opportunities and longer term predictors of school completion. In general, the timing of enrollment has not been measured. An exception is Ainsworth 2000, which showed delayed enrollment in children from households experiencing an AIDS death compared to children from other households.
- 2.3 In general, pupil and teacher absenteeism are not well measured. Asking Heads of schools and teachers about absenteeism without a means of verification is unlikely to yield unbiased findings. A technique that has not been widely used is that of asking pupils to report on teacher absenteeism, attrition and performance. Self reports of attendance by children have been used in one study (Gilborn et al 2001), “do you attend school regularly, or on most days?”, with differences apparent between children with ill family members and other children in the sample. Another study asked pupils to report the number of hours they spent in school in the preceding week (Ainsworth 2000).
- 2.4 Periods of school interruption are not measured in most of the studies reviewed (except Richter 1996). This factor may be particularly important in settings where a child is still considered to still be ‘in school’, despite staying at home for a period owing to economic stressors or other factors. Being in the appropriate age for grade was measured in one study (Rutenberg et al 2001).
- 2.5 School performance was measured in two of the studies reviewed (Elmore Meegan 1999 and Sengendo and Nambi 1997). The former study gathered these data through interviews with teachers, and the latter did not state how the data were gathered. Neither study reported on these data or stated why they did not report on them. Two studies asked teachers, heads and students for their perception of declines in performance after death of a parent, but did not ask for other reasons for decline in performance (Kinghorn et al 2002a and Kinghorn et al 2002b). Grade failure and repetition have not been well measured in the studies reviewed.

3 Measurement of orphan status and other evidence of AIDS impacts

- 3.2 Comparisons between orphans and non-orphans may be missing many points of vulnerability

along the orphanhood continuum.

- Time of orphaning (orphaning incidence) was neglected measure in the studies reviewed. Exploring educational disruption and drop out in relation to time of orphaning may help to identify crisis points in a child's life when he/she may be vulnerable to school drop out or interruption.
- Measures of children living with ill caregivers also important as vulnerability begins long before parent dies.

3.3 Prevalence of orphaning in a local area may be significantly affected by migration. This issue is discussed further in 4.5.

4 Measurement of other indicators

4.2 In most of the studies, there was a marked absence of concern with the community-level and school-level factors that may push children in or out of school, and may themselves be affected by HIV/AIDS (except Ainsworth 2000). For example, school quality measures such as overcrowding, experiences of bullying, discrimination and violence, poor physical environments, teacher professionalism are seldom measured, or where they are, the association between these factors and educational continuity and evidence of HIV/AIDS at the local level have not been explored.

4.3 The role of assistance and care and support in helping children remain in school and achieve well, has not been disentangled in most studies examining the issue of HIV/AIDS impacts. Ainsworth 2000 found that enrollment was higher amongst orphans from households who were receiving special assistance than those who were not, but analysis of the issue was limited. Measurement of school-level sources of support has not been well developed.

4.4 Much literature (mostly speculative) alludes to the fact that children in AIDS affected households will be drawn in to care for sick family members, care for younger children etc., and that this will cause their schooling to be disadvantaged. To explore this issue, some studies have asked children about time use, predominantly relying on recall. Because of the potential for recall and other biases, the phrasing of these questions becomes particularly important. The validity of measures that have been used is not known. Innovative measures such as time calendars for recording activities prospectively are less well used, fairly resource intensive and probably only feasible in the interview situation.

4.5 Migration of children in families affected by AIDS has not been measured in most of the included

studies, with the exception of Urassa et al 1997. In this study, children orphaned by AIDS and foster children were found to be highly mobile compared to children with living parents.

- It is argued that highly mobile children may experience greater vulnerability than other children and that, given the high background levels of migration amongst children in Africa generally, the reasons for migration/ fostering away from biological parents are important in considering the extent of vulnerability. Qualitative work mainly from West Africa, identifies a great variety of reasons for child migration and fostering. These include marital dissolution, learning a trade or skill, assistance with household tasks, education and desire for a child in the case of fertility problems.^{31,32} The authors point out that children “pulled” to another household eg desired by an infertile woman, are likely to be better off than children “pushed” to another household for example through death of caregiver or economic stressors. Obviously orphans mostly belong to the latter category and hence may be more vulnerable. All of the studies reviewed lacked sufficient data for analysis of this issue.

4.6 Several studies reported measures of health and emotional status of children. However these mainly relied on caregivers reports, which may be misleading and subject to bias.

4.7 Several of the studies measured knowledge, attitudes and reported practice related to an HIV prevention agenda. However, some confusing pictures have emerged (not presented), and comparisons across groups suggest that young peoples understanding and definitions of sexual intercourse are not clearly understood or captured in most surveys. Sexual experimentation and sexual games seem to be often categorised as intercourse by boys but not by girls. Appropriate interviewer-prompts or text explanations need further development.³³ Arguable, these are important because of the reported interactions between vulnerability and high risk behavior. For example, anecdotal reports suggest that orphaned girls have lower ages of sexual debut and more high risk sex than non-orphans. Sexual health and youth opportunity/ educational outcomes are thought to be highly interconnected, but this has not been well documented in the studies reviewed. This is discussed further in 5.6.

4.8 Teaching contact time, teacher attrition, absenteeism, school management issues, teacher morale and the presence of a supportive environment for school employees and other factors related to “supply” side impacts have not been widely measured either in school-based settings or elsewhere. Interactions between these impacts and the well-being and continued education of children have not been well investigated.

4.9 In general, it seems highly desirable for school surveys to measure a broad range of indicators in

order to track the multi-faceted ways in which the well-being of children in schools and communities can be preserved and the interactions between these factors. Indicators which are believed to be important for the well-being of children include: perceptions of peace in society, perceived family harmony, perception of the health of their environment, quality of food, access to schooling, ability to play in safety, and the degree to which they are 'looked down upon' by others.³⁴ These, together with the more traditional objective outcome indicators such as nutritional status, physical and mental morbidity, developmental stage for age and life skills are all under threat in societies severely affected by AIDS.

5 Methods of data collection, reporting and analysis

- 5.2 Quality controls to ensure high quality data were described by very few of the included studies.
- 5.3 Timing of data collection was not reported in most of the studies (except Gilborn et al 2001). Gilbourn et al in their survey of AIDS affected households only collected data during school holidays to minimize biases toward over sampling out of school youth. Timing of school surveys during peak seasonal labour periods may miss many children involved in child labour, and therefore underestimate this practice.
- 5.4 Few studies have provided statistical tests that indicate significance of associations presented or support the conclusions the authors draw from the data. Some studies failed to report non-response, or number of responses, reporting only percentages alone. This practice is clearly misleading, where there are small sizes in sub-group analyses and these data should be interpreted with caution.
- 5.5 Few studies used multi-variate techniques to explore relationships between variables.
- 5.6 Most studies lacked a conceptual model that related numerous outcomes and exposures being measured. In fairness, this may be because few studies explicitly set out to explore the effect of HIV/AIDS related factors on educational outcomes, this was a secondary aim for some of the studies, which nonetheless collected data on the indicators of interest.
- Correlates of belief and practice, are not well explored, nor are interactions between vulnerability (and support) and high risk behavior. For example, anecdotal reports suggest that orphaned girls have lower ages of sexual debut and more high risk sex than non-orphans. Sexual health and youth opportunity/ educational outcomes are highly interconnected in other ways. For example boys who find work in the formal sector, tend to be perceived as more

responsible partners, more likely to use condoms, more likely to acknowledge paternity, and girls who are employed tend to be more like to use family planning, negotiate condom use than girls who leave school early and are unemployed.¹⁴ None of the studies reviewed could draw conclusions on linkages between prevention or risk and care and support needs. This is at least for some of the studies a problem of data analysis, rather than data quality or completeness.

Concluding remarks

The studies reviewed highlight the diversity of approaches and tools that have been used to measure HIV/AIDS impacts on education at the local level. There is a common understanding across the studies that enrollment per se is a necessary but not sufficient measure of HIV/AIDS impacts. Other measures are evolving that examine other aspects of educational outcome, and relate impacts not only to orphans but to other affected children such as those in receiving households or those caring for the sick.

In general, there is considerable scope (in theory) for secondary analysis of the existing data from the studies reviewed here. Many of the studies contain a wealth of data that could inform the issue of educational outcomes and HIV/AIDS impacts in ways that are important for policy and planning. However in many cases, the analyses that have been conducted are limited to reporting of percentages. This limits their usefulness in answering some of the critical questions around HIV/AIDS impacts and educational outcomes, particularly in helping identify simple robust indicators for ongoing monitoring and surveillance.

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