REVIEW ARTICLE

Donor support for HIV/AIDS control in sub-Saharan Africa: review of its contribution towards health system strengthening

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Abstract

Background: Consequent to the signing of the MDGs in year 2000, a platform was created for the "injection" of donor funds into countries with great need. This was to accelerate the achievement of the goals by the year 2015. This systematic review assesses the evidence of how international developmental assistance has impacted upon development outcomes in health systems, focusing specifically on donor support for HIV/AIDS.
Methods: Via broad criteria the authors made the review as inclusive as possible and online search engines and databases including Embase, Google Scholar and Pubmed were searched over a period of eight months. Key words used to generate articles that fit the review topic included donor support, health systems, health outcomes, HIV/AIDs and Sub-Saharan Africa.
Results: The review identified discernible evidence of the impact of international developmental support for health services concerned with HIV/AIDS, with concerns for health systems strengthening.
Conclusion: Beyond the MDGs, the region needs a post-2015 development framework that will ensure sustainability for health system strengthening besides donor assistance. Donor support is only a part of the development picture. Economic growth and social progress as well as sustainable and workable policies for healthcare financing is needful, without which these countries which are over reliant on humanitarian actors will continue to cripple their ability to be self-sufficient and self reliant, and should these agencies cease to continue or run out of funding the consequences for the region will be dire.

Keywords: sub-Saharan Africa, donor support, HIV/AIDS, health systems strengthening.

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Introduction

Member states of the United Nations in the year 2000, signed up to the Millennium Development Goals (MDGs).[1,2] These are a set of eight (8) international development goals intended to catalyse development, reduce global poverty and improve on the overall living standards of humans the world over. Consequent to the signing of the MDGs, a platform was created for the 'injection' of donor funds into countries with great need. This is to accelerate achieving the MDGs by the year 2015.[3] Although, current estimates suggest that many countries globally are working towards achieving these goals with the view to strengthening their health systems, till date progress towards the achievement of the MDGs has not been promising as envisaged in sub-Saharan African countries.[3]

In the region, there is evidence that donor support for health systems strengthening has been remarkable with funding to combat major health problems reaching unprecedented levels and improvements on certain fronts.[4] For instance, findings reveal that donor funding for health care delivery programs doubled as a proportion of all developmental assistance for health from 2000 to 2007, and HIV aid increased nearly ten-fold from 1992 to 2005.[5,6] Revelations from the World Bank, estimates that in 2007 alone, it had disbursed over US$ 405 million, including funds for direct projects and lending for prevention and control of AIDS, reproductive health, *inter alia* in the region[7] In Zambia for example, there are estimates that the entire Ministry of Health's budget for 2006 was a sum of US$ 136 million with the President's Emergency Plan for AIDS Relief (PEPFAR) providing the country with a budget of US$ 150 million for tackling HIV/AIDS.[8] In fact, since the onset of the program, PEPFAR funding to some recipient countries neared or exceeded those countries entire national health budgets.[8] By 2009, PEPFAR accounted for approximately 70 percent of all HIV donor support in the region.[5]More so, in Nigeria, donor grants through the Global Funds for AIDS, Tuberculosis (TB) and Malaria (GFTAM), amounting to US$ 682,149,515.00 were provided between 2003 and 2009.[9] Of note is that many countries in the region now rely "heavily" on the availability of donor grants and loans particularly to

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finance health care delivery with evidence showing that about 20 percent of the total health expenditure in about 48 percent of the 46 countries in the World Health Organization (WHO) African region is provided for by external sources.[10] However, there is the "uneasy calm" that not all the donor support is reaching the countries in the areas of greatest need or being delivered in a manner that is proving effective.[11,12] For instance, while there have been funding to combat HIV/AIDS, and in some cases strengthen other primary health care services, there are reports of concerns too. Among these concerns is thetemporal association between increasing HIV/AIDS funding and the dwindling reproductive health funding as well as the accusations that scarce personnel are siphoned off from other health care services by offers of better-paying jobs in HIV/AIDS programs.[13-15] Equally, there is increasing controversy about whether the scaled-up investment in programs aimed at strengthening the fragile health systems of many countries in the region is producing the 'required outcomes' in creating self reliance in these recipient countries. Furthermore, there are concerns that donor expenditures for HIV/AIDS in the region are not only unsustainable but may be considered as inadequate considering the enormous health care burden in the region.[16] Besides these issues, the changing geo-political climate of the recent past decades alongside the poor results of decades of work and billions of dollars targeted at improving other social and economic conditions in the region, led to critical questions being asked of the usefulness, impact and effectiveness of these donor support .[3] These questions culminated in a series of high-level fora to debate the provision of donor support and its management. Of these includes: The Monterrey Consensus of the International Conference on Financing for Development, the Joint Marrakech Memorandum (Second International Round Table Marrakech, and the Accra Agenda for Action.[17] The rationale for these principles is that the provision, management as well as the use of donor funds should lead to better results in terms of achieving the development objective(s) set out in national development plans of which health policies forms a crucial component. Thus, the implications of the foregoing necessitated this systematic review. Accordingly, the authors outlined the research question: w*hat is the evidence of the impact of donor support on* HIV/AIDS *control and how does thiscontribute to health system strengthening in sub-Saharan Africa?*

Materials and Methods

This review involved a broad search of the literature on donor interventions with interests on HIV/AIDS. Only studies meeting pre-defined criteria were included in the review. These were studies conducted in sub-Saharan African countries with funding from external sources. Additionally, while conducting the research, the authors focused on studies published from 1990 to 2012. This date range reflects the beginning of a concerted agenda to reform donor support both in terms of outcomes and in terms of effectiveness. [18-20]This period therefore provided a broad time-span to capture donor interventions corresponding with the evolution of the donor effectiveness and poverty reduction agenda. Also, while conducting the review, the authors conducted searches only in English language. The abstracts retrieved were then used to evaluate the relevance of the studies. Finally, studies were excluded if they were published before 1990, did not make strong reference to donor supports and did not contain data on an external intervention or did not report impact. The search strategy employed a round of systematic searching for potentially eligible studies and two rounds of screening to identify studies that met the above criteria. The quality of the studies and findings in relation to donor intervention were checked by the review teamusing a quality assessment tool designed after that of the Department for International Development (DFID).[3] Quality assessment checks were undertaken throughout to ensure that the review was systematic and replicable. For this systematic review, we searched the Pubmed, Embase and Google Scholar and reference lists were inspected from relevant existing evidence, syntheses, systematic and literature reviews. Hand searches and other grey literatures were searched. Search terms were developed by the authors and materials included from hand searches were used**.** DFID systematic review of aids impact on MDG 5 was of great significance in this review.[3]The search was limited to studies with a sub-Saharan African medical subject heading (MeSH) term, involving aids, donor supports, outcomes and HIV/AIDS.

The intervention-specific search filters were drawn from those used in the Pubmed and Embase searches. All database searches were developed iteratively. The titles and abstracts of the first 328 identified studies were analysed for relevant terms. Those not already within the respective database search were added to increase the search sensitivity. Titles and abstracts were studied for relevance. Full-text articles were located for those studies determined as potentially meeting the inclusion criteria. We did not contact any expert for their opinions to see if they knew of any additional unpublished or published data. We also examined the bibliographies of all full-text papers for further potential studies. More so, a range of studies were considered for inclusion for this review; ranging from quasi-experimental, pre and post-tests, data reviews, panel reviews, interrupted time series, retrospective observational designs and an impact assessment study. Finally, all search histories were recorded.

Data extraction

Data extraction was conducted independently by the authors (reviewers) using a common, pre-defined reporting matrix to summarise findings. Where possible this information was also extracted from study papers and references. The characteristics of each study which determine the effectiveness of donor support was extracted and is detailed in the data extraction table.

Assessment of risk of bias

As there are no single existing approach to the assessment of quality and the identification of bias in studies evaluating the effect of international donations, the authors created a quality assessment checklist with quality assessment criteria from previous reviews. The assessment checklist focused on the following: the independence of the study, quality of reporting on the donor intervention, robustness of the study design and methods, robustness of the data analysis and quality of reporting of confounding factors. What was then done was to provide answers which were categorised as Yes/No/Unclear. Additionally, no study was excluded on quality basis.

Analysis

For this review there was no statistical pooling of outcome data due to the heterogeneity of the studies with regard to contextual and interventional factors. Accordingly, the authors conducted a narrative description of the results.

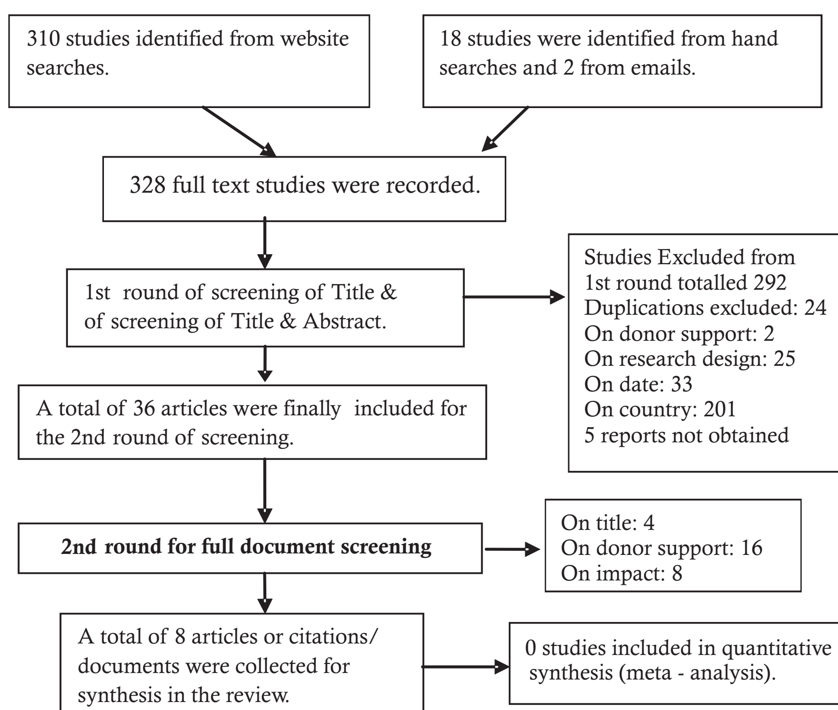
Results

Our searches identified 328 full titles and abstracts (see Figure 1). First round screening of these titles and abstracts revealed 36 papers that potentially met the inclusion criteria and full-text articles of these were obtained for a second round of screening by the review team. A total of 8 documents (citations) published between 1998 and 2012 met the review's inclusion criteria for review synthesis.The key characteristics of interest in the studies are summarised in Table 1.

Study settings

All included studies were conducted in sub-Saharan African countries or related directly to donor interventions in sub-Saharan African countries. Countries where studies were conducted included: (i) Southern African countries: South Africa, Malawi, Zimbabwe and Zambia-, (ii) Eastern African Countries: Kenya, Rwanda and Tanzania as well as (iii) West and Central African countries: Nigeria, Ghana, Cote d'Ivoire and Cameroon. Of the eight studies; three were conducted in southern African countries [13,21,22],three were conducted eastern Africa countries, specifically Rwanda, Tanzania and Uganda [13,23,2425], while other countries such as Ghana, Guinea, Nigeria, Cameroon etc were included in some of these studies collectively.[26] These studies accessed the impact of international developmental assistance through funding for HIV/AIDS on health care delivery and the health system. Importantly, the studies were conducted in rural settings where there is the highest burden of diseases and where the impact of international funding

Figure 1: PRISMA Flow chart of search results of studies from searching and screening.



for HIV/ AIDS and its co-morbidities would be most significant.

Study designs and outcomes

Two studies were quasi-experimental studies[24,25] four were data reviews,[5,13,22,26] one was a retrospective observational study,[23] and one was an impact assessment studies respectively. [21] The studies included interventions funded by the following: (i) multilateral agencies as primary actors: World Bank; studies on interventions involving a comparative analysis across a large number of donors (ii) interventions funded by bilateral donor agencies as primary actors such as USAID, Canadian International Development Agency (CIDA), DFID. These studies measured directly or indirectly the impact of international develop-mental assistance on HIV/AIDS through study designs that were well adapted for each.

Evidence from the studies reveals that there were positive contributions on health systems across the sub-Saharan African region from international developmental assistance, although some of the evidence is anecdotal. These programmes were associated with decreased incidence and prevalence of HIV/AIDS and its decreased burden on health facilities as well as increased access to parallel services such as quality family planning and improvement in the use of child spacing services. Findings from the review showed that health facilities providing HIV

Table 1: Characteristics and findings of Studies

Study	Study design	Program Name	Setting	Year of intervention	Donor	Summary of outcomes
1. Price et al. 2009	Retrospective observational design.	not specified	Rwanda	Unspecified		Findings suggest that HIV-focused health care is not associated with declines in the delivery of other primary health care and may be associated with increases in key preventive services, particularly in reproductive health
2.Williams et al. 2007	Quasi-experimental; post-test only evaluation	Africa Youth Alliance Programme	Ghana, Tanzania	Ghana: 2001-2005, Tanzania: 2002-2005, Uganda: 2001-2005.Programme concluded in 2006	Bill and Melinda Gates Foundation, UNFPA and a number of others	The study showed behaviours that were population wide contributions such as decreased incidence of HIV/AIDS and other sexually transmitted infections, fewer unwanted pregnancies. However, the effects on healthy systems could not be ascertained directly.
3. World Bank, 2006.	Impact assessment study	Malawi Country Assistance Evaluation	Malawi	1998	World Bank.	Contribution to the design of the Bank's 1998 Country Assistance Strategy for health systems strengthening including HIV/AIDS. Findings showed marked improvements system wide effects health care delivery.
4.Shepard et al., 2012	Quasi-experimental design.	To evaluate the impact of HIV/AIDS funding on the primary health care system of Rwanda.	Rwanda	2002-2006	Multiple	Facilities providing HIV programmes had marked improvements in its services unlike those not running HIV programmes were the findings were slightly improved within the same period.
5. Yu et al., 2008	Panel Review	Not directly stated	Ethiopia, Malawi, Zambia, Kenya.	not stated	Multiple funding partners	The evidence is mixed as to the impact of HIV/AIDS scaling up on health systems. Most of the evidence supporting scaling up of health systems are anecdotal as there are few evidence in this regards in the region
6.Kruk et al.,2012	Secondary Data Review	PEPFAR programs Linked to maternal health in health facilities in eight African countries.	Cote d'Ivoire, Ethiopia, Lesotho, Mozambique, Nigeria, Rwanda, South Africa, and Tanzania	2007-2011	PEPFAR.	HIV/AIDS funding had no negative effect on maternal, child and other services however the correlation between this and other systemic services was not strong.
7.Brugha et al.,2010	Primary Data review	Not directly stated	Zambia	2004-07	Not stated directly	There was positive correlation between HIV programmes and reproductive health programmes as well as immunization programmes. However, DPT3 & BCG had negative correlation with ART, PMTCT and VCT programmes.
8.Grepin, 2012	Primary Data review	Not directly stated	Sub-Saharan African countries, Uganda	2002-2010	Not stated directly	HIV aid in some countries crowded out the delivery of non-HIV services, especially in countries with the lowest density of health care providers.

PMTCT= Prevention of Mother to child transmission **FY**= Fiscal Year; **VCT**= Voluntary Counselling and Testing; **DPT_3**= Third schedule of Diphtheria-Pertusis-Tetanus Vaccination; **ART**= Antiretroviral therapy.

programmes had marked improvements in its services but not quite the same for those not running HIV programmes were the findings were only slightly improved within the same period.[25] Furthermore, the findings suggests that HIV focused health care was not associated with declines in the delivery of other primary health care services in many cases and this is associated with increases in key preventive services, particularly in reproductive health and other parallel health care services such as child hood immunization.[22,23,26]However, the scaling-up of HIV/AIDS funding appeared to have crowed-out some reproductive health services in certain instances besides others.[23]Although, there were reports of moderated positive correlations in trends within facilities antiretroviral therapy (ART), prevention of mother-to-child transmission (PMTCT) and sometimes between reproductive health services (family planning and antenatal care), however, in some other cases were childhood immunisations increased overall, this did not necessarily occur in facility catchment areas where HIV service scale-up occurred.[23] Furthermore, while the effects of vertical health programs on HIV/AIDS were not too prominent on the health systems in the region, they were also significant in other instances. Finally, it was found out that for the health indicators(burden) examined (HIV/AIDS), there were neither "prominent" diversion of parallel health services after AIDS services were inaugurated in health centres.[25]

Risk of bias and quality assessment

In the review, there was no exclusion of studies on the basis of quality. Rather what was done was to use a quality assessment checklist: (a) to highlight potential bias or untrustworthiness in the study findings and (b) to assist with categorising donor support. On the independence of the studies, two studies did not have their authors with links to a project; [22, 25] however, only one study did not receive donor funding directly as reported.[13] Equally, assessing the reports of developmental assistance reveals that six studies did not specify the exact amount of aid given; five did not clearly explain the flow of funds from funder to recipient. Nevertheless, the study designs met the required criteria for inclusion in the review as the data collected and analysed supported their conclusions It is of note to add, that not all the studies discussed the possible alternative explanations behind the results.

Discussion

Systematic reviews have increasingly replaced literature reviews and expert commentaries as an approach to summarising research evidence. High quality systematic reviews produce the most reliable source of evidence to guide practice and decision making.[27] Accordingly, this systematic review therefore contributes to the process of evaluating the impact of donor support on health systems and health care delivery, as it assessed the available evidence of how donor support impact on HIV/AIDS in sub-Saharan Africa. Although, systematic reviews are critical to policy making, it is however distressing to note that there are very few published systematic reviews that have sought to provide evidence of impacts of international developmental assistance on the health related MDGs in the region. Accordingly, findings from the studies reviewed revealed that were mixed effects in most health centres where infusions of HIV/AIDS-related funding were instituted.[25] However, in some other instances, the rapid increase in international funding for these programs (particularly those targeted at HIV/AIDS) in the region particularly since 2002 crowded out the delivery of immunizations particularly in countries with the lowest density of human resources such as Burundi and Rwanda.[5] In fact, findings from studies in countries like Zambia, Burundi and Rwanda where PEPFAR funding for HIV/AIDS provides HIV positive patients free care, others with more routine diseases received poor care and still have to pay. Notably, a one-dollar increase in per capita HIV aid was associated with a decrease of 0.1-0.2 percentage point in the provision vaccines across the region but much stronger in countries with low human resources for health.[5]

On the relationship between funding for HIV/AIDS directly and other parallel services such as maternal health it was shown that funding had no significant negative effect on maternal services, however, the correlation between this and other systemic services was not strong.[24] Furthermore, programmes that were targeted only on maternal health suggests that the interventions improved contraceptive usage among female and male participants in recipient countries but the impacts on health systems could not be measured directly from studies.[21] It is possible that some of the available evidence is rather anecdotal, suggesting the need for further research.

More so, the influx of funding for HIV/AIDS might have encouraged physician and other health workers migration from the public to the non-governmental organization sectors. [25,28]The situation is also such that salaries of healthcare providers working for donor funded vertical programmes are often more than double those of equally trained government workers in the fragile public health sector.[33] The import is that it lures highly skilled government workers to the higher paying vertical programmes and creates an internal 'brain drain'. This creates dire circumstances for the underfunded primary care clinics and health centres that care for all diseases, including common illnesses such as diarrhoea, poor nutrition and respiratory tract infections, which take many more lives than

HIV/AIDS. In fact, these donor investments may shift strategies and commitments to manage other diseases in a country. It is possible that while these funds may be channelled for the their primary objective(s); aids in many instances are allocated only to disease specific projects (termed "vertical programming") rather than to broad based investments in health infrastructure, human resources, and community oriented primary healthcare services ("horizontal programming"). Does this then imply that donor funding paradoxically weakens the health care system of recipient countries. On the contrary, advocates of donor funding believe that donor support for health such as that in Rwanda has improved the infrastructure, management, communications, laboratories, information systems, and human resources as well as contributed to standardization of services, strengthened monitoring and surveillance systems of health systems.[23,29,30]In Ghana for instance, between1998 and 2002, there were marked improvements in system wide effects on health care delivery.[21] More so, there was a positive correlation between HIV programmes, reproductive health programmes as well as immunization programmes in many parts of the region. However, our findings reveal that DPT_3 and BCG vaccinations had negative correlation with ART and PMTCT programmes in Zambia.[26]Notwithstanding, an overview of the literature reveals that this evidence is little to support these claims if other contextual issues- such as social and political factors- within the different countries in the region are taken into cognizance as it is very difficult to get a holistic evaluation of the impacts of donor funding in this regards.

Conclusion

While international developmental assistance for health to countries in sub-saharan Africa may be of substantial support towards achieving the objectives of the United Nations' millennium development goals, sustainability is fundamental if anything is to go by. Beyond the MDGs, the region needs a post-2015 development framework that will ensure sustainability for health system strengthening besides donor assistance. This is because, given the existing issues surrounding the outcomes of donor support (vertical programmes, conflicts of interests' etc) for strengthening of health systems, it has become critical that countries of the region ought to implement strategies (bold steps to provide sustainable policies and workable programmes) for sustainability and self-reliance. Economic growth and social progress as well as sustainable and workable policies for healthcare financing is needful, without which countries in the region which are over reliant on humanitarian actors will continue to cripple their ability to be self-sufficient and self-reliant, and should these agencies cease to continue or run out of funding the consequences for the region will be dire.

Competing Interests

The authors declare that they have no competing interest. The views and opinions expressed in this article are those of the author and do not reflect the official policy or position of any government or agency.

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