

Peer Review File

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Reviewer Comments

This is an important paper on a topic that merits attention and should be of interest to readers interested in domestic and international HIV control.

It is well written and analyzed. It could be improved and the authors may want to consider the following comments:

Comment 1: Why pick 2010 as start point—why not pick 1981 which is the year attributed to the discovery of HIV and AIDS as a problem (the virus was discovered soon thereafter)?

Reply 1: Following the first reports of AIDS in 1981, the search for preventive and therapeutic management options has accelerated the growth of related literature. To date, over 200,000 articles have been published on the topic, with several previous studies exploring academic output during the early years of the epidemic, such as Sengupta and Kumari (1991), who looked at the literature between 1976 and 1986, and Aleixandre (1995), who looked at the literature from 1983 to 1992, among others.

Our decision to focus on the previous ten years (2010-2020) was not based on any major milestone in HIV control; rather, our goal was to assess the current landscape and recent directions undertaken in HIV/AIDS research by identifying the most cited articles in this decade. We acknowledge the need for a study with no limitation on time of publication, and this could be our next project.

Comment 2: The analyses are excellent but lack a certain sense of history and of the major shifts in the paradigm of HIV control—this could be misleading for readers--not sure how to correct it but can provide an illustrative example.

a. 1996 was a landmark year as it was the year that triple therapy was put forward in a series of landmark papers—this changed the paradigm from one of palliative care to the potential for lifelong therapy.

b. 2001 Quinn et al and another paper put forward the concept that HIV suppression through treatment was possible. This was barely noticed but built momentum with Montaner's 2006 Lancet paper suggesting that treatment itself could be used to control the epidemic. Fang, Das, and others published ecological data suggesting decreased incidence with increased access to treatment. In 2009 Attia, in support of the 2008 Swiss Statement, published a meta-analysis that showed a 92% reduction in transmission risk with viral suppression. Our group at WHO published a paper in 2009 that suggested that test and treat could eliminate HIV, and heretofore unthinkable premise. Cohen, building this momentum then published 052 paper. The paradigm

was slowly shifting towards immediate testing and treatment but was resisted by most of the dominant experts who have the most citations in the article (including Cohen who wrote commentaries against treatment as prevention). WHO only changed to test in treat in 2015? The test and treat paradigm represented a major shift that is ongoing as the world tries to use treatment and other prevention to control HIV. It led to the current 90-90-90 strategy that PEPFAR and GF and others have used since it was proposed in 2014. Despite the fact that some experts place their emphasis on PrEP (lots of Gilead financed papers) and vaccines and other prevention—treatment remains the most powerful prevention intervention. In other words the number of citations may not reflect the actual truth or science. The authors, with a bit more work, could make this important point. The bibliometrics may not always represent the importance of the paper—the obscure 2006 Montaner Lancet paper heralded a seminal recognition of a new paradigm that was coming but was probably relatively uncited compared to a paper on neutralizing antibodies for a vaccine that has not yet appeared.

c. There are probably other examples. Circumcision was a game changer that took at least 10 years of papers and scientific advocacy to translate into implementation. The early seminal papers were likely uncited as they were unpopular.

Reply 2: Thank you for pointing this out and for providing an insightful illustrative example. The following changes have been made to the text

Changes in the text: On pages 21 (starting from line 17) and 22 (lines 1-23), we have reviewed some major shifts in the paradigm of HIV control that have occurred in the context of the peak period in terms of citations for our study (2010-2013), to demonstrate that the number of citations may not always accurately represent the influence of a publication as we have shown some important publications in the history of HIV were for a reason or another not as highly cited as they would be expected to be.

We have also addressed this as a limitation of the study on page 24, lines 2-7.

Comment 3: Corporate capture of the scientific discourse is an important issue that could also be mentioned as it has the potential to skew the bibliometrics. Gilead and Gates have heavily sponsored the development of PrEP. Our recent unpublished work suggests that over 70% of papers on PrEP published in the US in 2018 had some form of Gilead sponsorship. Many authors receive direct support and are responsible for multiple pro-PrEP publications. It is beyond the scope of the article but elaborating on this issue in the limitations could help readers understand potential biases. Not only do big institutions with government funding tip the scales, but corporations and private foundations with extensive stock portfolios also influence the quantity and type of papers published. In the case of both Gilead and Gates, many of their authors push PrEP as equal to treatment in terms of prevention and that, along with extensive lobbying, is why PrEP is now mistakenly an equal pillar for the struggling US HIV control strategy.

Reply 3:

Changes in the text: We have included an analysis of the top 10 agencies involved in the financial support of the HIV/AIDS publications included in this study (page 16). We have also

indicated that the NIAID, one of the top three funding agencies is also in the top institutions in terms of both the number publications and citations (page 23, lines 24-26) as well as the affiliations of the most productive and most cited authors whose work is focused on vaccine strategies. This may illustrate the idea that funding source may have an influence on research directions as well as bibliometric indicators. This potential influence is also reiterated in the limitations of the study (page 24, lines 13-15)

Comment 4: I appreciated the analysis of institutions and authors from wealthier countries vs countries in Africa. This neocolonialistic state of scientific discourse is a serious problem. The money is there for research and for people to fly back and forth to Africa but it is not there to develop African institutions and research agenda. Billions have been invested in research. What is most troubling is that the vast majority of the results are never translated into interventions in the countries to help provide improved services. Papers are published but translation can take years or be forgotten. The brightest minds are often working on projects that will have no impact on their countries disease control. My hypothesis is that places like Tanzania, Uganda and Kenya, despite hundreds of millions spent on research and thousands of papers, may have poorer performance on important indicators such as 90-90-90 than other less research popular countries.

Reply 4: Thank you, this is a major issue and probably one of the reasons why preventable infectious diseases are still the leading causes of mortality in developing countries despite the huge amounts of funds invested in the area.