Study 1. Shifting Trends in the Foci of HIV/AIDS Research Over Time

HIV/AIDS science has existed for nearly 30 years, yet little is known about how much it has grown and what areas of investigation have been popular. We examine these trends, with an emphasis on HIV/AIDS prevention and drug therapy.

Methods: MeSH terms were used to search the PubMed database for estimates on the total number of journal articles published on HIV/AIDS broadly, HIV/AIDS prevention and control, and HIV/AIDS drug therapy; as a comparison, we conducted a parallel search on cancer literature. Numbers of search results were recorded and proportions of all publications available on PubMed were calculated for each year of publication between 1982 and the last available complete year, 2009.

Results and Discussion: HIV/AIDS literature increased substantially over time, both in overall number ($r = 0.95$; see Figure 1) and as a proportion of the amount of literature in the PubMed database ($r = 0.62$; see Figure 2). HIV-related literature has grown markedly in nearly its three decades, but it still lags behind other prominent disease literature, cancer (Figure 1). These trends are evident both in overall number of reports and rate of growth over time.

Figure 1.

HIV/AIDS Drug Therapy literature also increased considerably, especially after the introduction of ART (in 1996), while HIV/AIDS Prevention and Control literature waned (see Figure 2). Still, Prevention and Control literature has grown substantially over time, with over 23,000 reports. The current study used only the PubMed database to observe trends in literature growth and research topics. We chose this database because it is publicly accessible, is held in high regard by the scientific community, it samples a wide range of international journals, and has the proper infrastructure to facilitate this type of survey. Yet, it has a heavy focus on medical journals, and much prevention research is reported in a wide breadth of social science venues. The use of MeSH terms also introduces an age and prestige bias, where newer publications are not indexed immediately, and less prestigious journals, such as many non-English journals, may never be indexed. Consequently, the actual literature on HIV/AIDS is certainly much larger than Study 1 indicates.

Figure 2.

Trends in HIV/AIDS Science
Is Prevention Getting the Short End of the Stick?
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Study 2. Mapping the History of HIV/AIDS Prevention Activities

When and where have scientific investigations of behavioral HIV/AIDS prevention interventions taken place? Do they coincide or conflict with regions most at need for prevention efforts?

Methods: We submitted an inquiry to the PRS database at the CDC for citations to journal articles reporting on behavioral HIV prevention interventions. Articles were located in full-text and coded by two independent coders for the initial year of data collection, location(s) of intervention activities, and the primary risk behavior targeted (i.e., sex, IV drug use, and other). Geographic regions were conceptualized based on the UN Statistics division’s geographic allocations, and multiple geographies represented in an article were treated as separate prevention instances.

Results:

Our inquiry yielded 693 journal articles, of which 691 were located and coded (inter-rater reliability > 0.80), representing 696 prevention trials conducted in 50 countries.

Limitations:

These data derive from an analysis at a national level based on references in the CDC database. The current study is limited in that it (1) focuses on national geographical units rather than specific geographies that may well be more relevant to the fight against HIV/AIDS (e.g., IDUs or MSM in the U.S.). Similarly, this study (2) did not consider unpublished research or (2) any published research that is not indexed by the CDC, including many non-English journals. Moreover (3), this study did not detail what types of prevention efforts were attempted, nor (4) how successful such efforts were. Meta-analyses of this literature are necessary to gauge intervention success.

Conclusions:

HIV/AIDS reports shifted from prevention to medical treatment after antiretroviral therapy was introduced. This overall finding is disturbing—until effective vaccines are implemented, prevention remains crucial to curb the HIV/AIDS epidemic and reduce the costs of AIDS care. Even in the realm of behavioral prevention, relatively few scientifically rigorous trials are being conducted in the areas that are most threatened by HIV/AIDS. In fact, while the literature on HIV prevention interventions is quite large, overall, the bulk of these trials are conducted in Western nations that have relatively lower HIV/AIDS prevalence, although inspection of trials in the West suggests that they often focus on subgroups at greater risk for HIV/AIDS.

Implications:

The magnitude of literature that must be reviewed in order to maintain standards of evidence-based practice makes systematic and meta-analytic reviews increasingly important to cumulate knowledge on which future research can be built. The construction of an HIV prevention library, with more sophisticated and field-specific outputs that are available in conventional online databases, would be a huge contribution to furthering the science of HIV prevention (and related outcomes), and ultimately the dissemination of the most efficacious interventions. It also would foster a more refined knowledge of health behavior change. An evidence library offers the hope of more efficient literature review and the ability to put new findings into appropriate perspective with greater speed and accuracy.