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An assessment of global Internet-based HIV/AIDS media coverage: implications for United Nations Programme on HIV/AIDS' Global Media HIV/AIDS Initiative

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Summary: No studies to date have assessed the quantity of HIV/AIDS-related media on the Internet. We assessed the quantity of language-specific HIV/AIDS Internet-based news coverage, and the correlation between country-specific HIV/AIDS news coverage and HIV/AIDS prevalence. Internet-based HIV/AIDS news articles were queried from Google News Archives for 168 countries, for the year 2007, in the nine most commonly spoken languages worldwide. English, French and Spanish sources had the greatest number of HIV/AIDS-related articles, representing 134,000 (0.70%), 11,200 (0.65%) and 24,300 (0.49%) of all news articles, respectively. A strong association between country-specific HIV/AIDS news coverage and HIV/AIDS prevalence was found, Spearman's rank correlation: 0.6 ($P < 0.001$). Among countries with elevated HIV/AIDS prevalence ($\geq 10\%$), the volume of HIV/AIDS-specific media was highest in Swaziland (15.9%) and Malawi (13.2%), and lowest in South Africa (4.8%) and Namibia (4.9%). Increased media attention should be placed on countries with high HIV/AIDS prevalence and limited HIV/AIDS-specific news coverage.

Keywords: HIV/AIDS, prevalence, Internet, media, news coverage

INTRODUCTION

HIV/AIDS is projected to become the third leading cause of mortality worldwide by 2020.¹ An estimated 33.2 million adults and children were living with HIV by the end of 2007.² Media campaigns have been instrumental in increasing public knowledge and awareness about HIV/AIDS in resource-limited settings.^{3,4} They have contributed to increased uptake of HIV testing,⁵ improved public and health-care provider knowledge about HIV transmission and enhanced self-efficacy of condom use. Moreover, mass media has influenced sexual behaviour, social norms and inter-personal communication regarding HIV/AIDS, and assisted in reducing stigma and discrimination.⁶⁻⁹

With the aim of increasing media leadership in the fight against HIV/AIDS, the United Nations Programme on HIV/AIDS (UNAIDS) established the Global Media AIDS Initiative in 2004.¹⁰ Since the inception of this initiative, UNAIDS has collaborated with over 100 broadcasting companies from 62 countries.¹⁰ As part of the initiative, UNAIDS has called upon participating media companies to increase local and global news coverage about the HIV/AIDS epidemic.¹¹

Studies assessing the quality and quantity of global HIV-related news have generally focused on traditional sources, including print press, television and radio.^{3-6,12,13} None have examined HIV/AIDS reporting in Internet-based news sources. As global media companies increasingly make news available online, the Internet is having a significant displacement effect.¹⁴ Although major television networks in the USA have 47 million viewers per month, Internet news sites receive in excess of 136 million monthly visitors.¹⁵

In order to further establish priorities related to the Global Media HIV/AIDS Initiative, it may be useful for UNAIDS and participating media companies to assess the extent of HIV/AIDS-related news on the Internet, and whether it is appropriately focused on countries with elevated HIV/AIDS prevalence. We therefore sought to determine the proportion of language-specific Internet-based news articles focused on HIV/AIDS, and to determine whether any correlation exists between the amount of English, Spanish and French language HIV/AIDS news online and country-specific HIV/AIDS prevalence estimates.

METHODS

Google News Archives

Google News Archives is a commercial news aggregator that provides access to a broad range of global English language

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print press and Internet news. The system is fully automated, limiting reporting bias, and has the capacity to run news searches according to specific keywords and dates. Although the exact number is not documented, Google News Archives purportedly tracks over 10,000 news sources in 44 languages.¹⁶ For this study, we performed search queries using the HealthMap global disease news monitoring system.¹⁷

Global language-specific news articles about HIV/AIDS

We queried all 2007 news articles mentioning 'HIV' or 'AIDS' from Google News Archives, repeating the search in the world's top nine most commonly spoken languages (Chinese, English, French, Spanish, Arabic, Portuguese, Russian, Japanese and German).¹⁸ Hindustani (Hindi/Bengali) languages, which are the third most widely spoken languages worldwide, were excluded from our analysis as they are not currently available in Google News Archive.

We then determined the language-specific proportion of articles about HIV/AIDS, by dividing the number of HIV/AIDS-related articles in each language by the total number of news articles in that language. The proportion of language-specific HIV/AIDS news articles was recorded as a value per 10,000 articles.

Correlation between HIV/AIDS news coverage and HIV/AIDS prevalence

We developed country-specific 'HIV/AIDS media prevalence' values for each country worldwide for the year 2007.¹⁹ For English searches, we performed a keyword search across Google News Archive using the terms 'HIV', 'AIDS' and 'English country name'.

We then divided the number of English-language articles mentioning 'HIV' or 'AIDS' and a specific country (numerator) by the total number of English-language news articles published about that country (denominator). This calculation was repeated for a total of 168 countries, allowing us to obtain country-specific values for the 'prevalence' of HIV/AIDS English-language media by country. We repeated this search in French and Spanish, inputting 'VIH' and 'SIDA' and '(French/Spanish country name)' as keyword search terms.

We obtained epidemiological HIV/AIDS prevalence estimates for children and adults, for all available countries, from the Joint United Nations Programme on HIV/AIDS (UNAIDS)'s 2008 Global Report on AIDS.² In order to determine whether any relationship exists between country-specific prevalence of HIV/AIDS media and country-specific prevalence of HIV/AIDS disease, we used a Spearman's rank correlation (ρ or r_s).

RESULTS

Table 1 shows media articles about HIV/AIDS, as a proportion of all articles, for the top nine languages most commonly spoken worldwide. English, French and Spanish language news sources had the highest proportion of articles about HIV/AIDS, compared with any other language, with 0.70%, 0.65% and 0.49% of all news articles about HIV/AIDS, respectively. Arabic language news sources also had a high proportion

Table 1 HIV/AIDS media articles, as percent of all articles, for the top nine languages spoken worldwide, 2007

| Language | HIV/AIDS media articles | Total media articles | Percent HIV/AIDS media of total articles |
|--------------------------------------|-------------------------|----------------------|--|
| Chinese (simplified and traditional) | 33,740 | 11,140,000 | 0.30 |
| English | 134,000 | 19,200,000 | 0.70 |
| Spanish | 24,300 | 4,990,000 | 0.49 |
| Arabic | 4160 | 980,000 | 0.43 |
| Russian | 5120 | 3,740,000 | 0.14 |
| Portuguese | 1560 | 1,690,000 | 0.09 |
| French | 11,200 | 1,730,000 | 0.65 |
| Japanese | 1550 | 1,080,000 | 0.14 |
| German | 9030 | 2,640,000 | 0.34 |

of HIV/AIDS news articles; 0.43% of all articles published in Arabic were about HIV/AIDS.

Figure 1 displays a scatter plot of the association between prevalence of HIV/AIDS media articles in English, French and Spanish and prevalence of HIV/AIDS disease, for 2007. The majority of HIV/AIDS English, French and Spanish language news reports were concentrated in sub-Saharan Africa, paralleling the epidemiological disease burden of HIV/AIDS in the region. We found a significant association between country-specific HIV/AIDS media coverage and HIV prevalence, with a Spearman's rank correlation of 0.6 ($P < 0.001$).

Among Anglophone countries with the most elevated HIV/AIDS prevalence (also the highest globally), the volume of HIV/AIDS-specific media coverage compared with all articles was highest in Swaziland (15.9%), Malawi (13.2%), Lesotho (12.6%), Zambia (10.8%) and Uganda (9.2%), and lowest in South Africa (4.8%), Namibia (4.9%) and Zimbabwe (6.1%). In Francophone countries with elevated HIV/AIDS prevalence, the volume of HIV/AIDS news was highest in Rwanda (6.9%), Burundi (4.5%) and the Central African Republic (4.1%), and lowest in and Côte d'Ivoire (1.1%) and Chad (0.8%). Among Spanish-speaking countries, the volume of HIV/AIDS news was highest in Equatorial Guinea (2.1%). Globally, coverage was lowest in South American countries, with Uruguay (0.24%) and El Salvador (0.18%) yielding the lowest proportion of HIV/AIDS-specific media coverage.

DISCUSSION

Our study assessed the quantity of global Internet-based HIV/AIDS news coverage, and determined the association between this coverage and country-specific HIV/AIDS prevalence. We found that English, French and Spanish news sources had the highest proportion of HIV/AIDS media coverage, compared with news sources in other languages. We found a statistically significant correlation between country-specific HIV/AIDS media coverage and HIV/AIDS prevalence, indicating that country-specific HIV/AIDS media coverage is generally proportionate to HIV/AIDS prevalence in 2007. However, some countries with elevated HIV/AIDS prevalence ($\geq 10\%$) had extremely poor HIV/AIDS-specific media attention, including South Africa, Namibia and Zimbabwe. We also identified countries with elevated HIV/AIDS prevalence ($\geq 10\%$) that had succeeded in gaining significant HIV/AIDS-specific media coverage, including Swaziland, Malawi and Zambia.

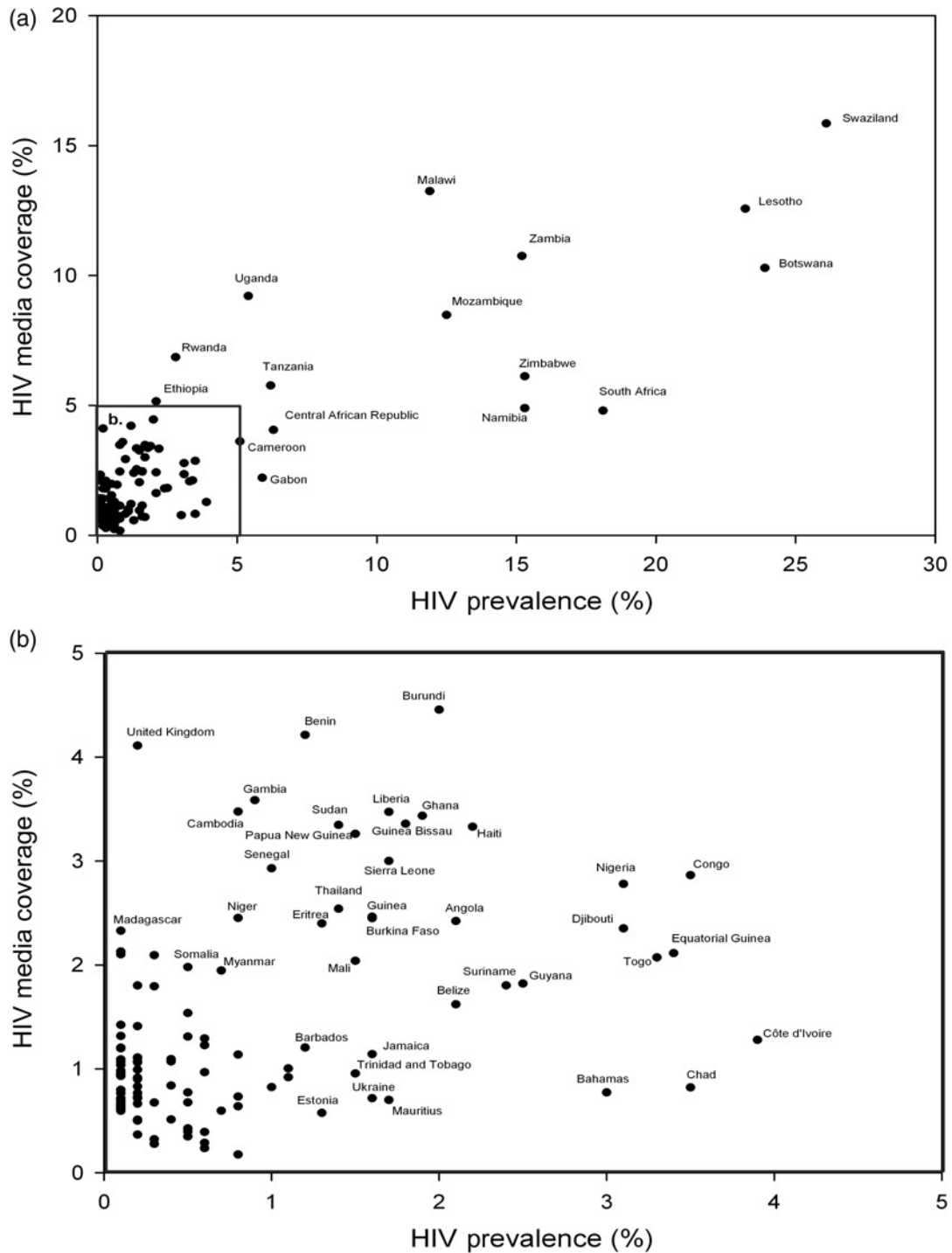


Figure 1 Association between prevalence of HIV/AIDS English, French and Spanish media articles and prevalence of HIV/AIDS disease, by country, in 2007 ((a) media and epidemiological prevalence $\geq 5\%$, and (b) media and epidemiological prevalence $\leq 5\%$)

These findings are relevant in light of current international efforts aimed at increasing HIV/AIDS media reporting. Specifically, they are relevant to broadcasting companies seeking to support UNAIDS' efforts to increase HIV/AIDS reporting.²⁰ UNAIDS' Global Media AIDS Initiative has made great strides in strengthening the volume and quality HIV/AIDS reporting, most notably by encouraging broadcasting companies to consider HIV/AIDS a corporate priority; committing media time and space to the topic; and promoting public service announcements on television and radio, via poster

distribution, and through other common media forms.¹² Comparatively little attention has been given to strengthening Internet-based HIV/AIDS news.

Internet access has increased substantially in sub-Saharan Africa over recent years, from an estimated 4.5 million users in year 2000 to 54.2 million in 2008.²¹ Although Internet use in sub-Saharan Africa remains limited compared with the rest of the world, the rapid expansion of Internet access offers an important opportunity for HIV-related media campaigns to be proactive. Our findings highlight the need to increase

global Internet-based HIV/AIDS news reporting about select countries with elevated rates of HIV/AIDS. Specific attention should be paid to countries such as South Africa, which has the highest number of people living with HIV/AIDS on the continent² and has an estimated 4.6 million people (or 9.4% of the total population) accessing the Internet.²¹

The Internet is playing a growing role in public health communication.^{15,16} With respect to HIV/AIDS, online information can supplement traditional public health media through promotion of global and national prevention, education and research.^{12,22} Studies in the United States have found that 34% of adults regularly consult the Internet for news,²³ and 44% of young adults access the Internet to seek sexual health information, including about sexually transmitted infections and HIV/AIDS.²⁴ In low-resource countries, high school students, physicians and research scientists are also increasingly using the Internet to seek HIV/AIDS information.^{25,26} A survey in Uganda found that over a third of adolescent youth used the Internet to access health information,²⁷ suggesting that the Internet may be a promising platform for delivering low-cost HIV/AIDS risk reduction interventions in resource-limited settings.²⁵

An important limitation of our study is that we did not assess the quality of HIV/AIDS news content. Such an analysis was impossible with the search engine technique used. Future studies focusing on Internet-based HIV/AIDS media should seek to develop novel search engine querying methods to evaluate the quality of HIV/AIDS news sources. Assessing the quality of news reports would be valuable, especially given concerns about the accuracy of media reports of epidemiological data,²⁸ the need for increased educational HIV/AIDS reportage and concerns about political interference with the media in some high prevalence countries.²⁹

Our findings are also relevant for media companies seeking to support UNAIDS' Global Media AIDS Initiative. Our results indicate that several countries with elevated HIV/AIDS prevalence have received limited Internet-based media coverage about the HIV/AIDS epidemic. Focusing HIV/AIDS media efforts on these countries would support the Global Media AIDS Initiative overall goal to raise awareness about HIV/AIDS, change attitudes and fight HIV/AIDS-related stigma.

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