

# Exploring HIV/AIDS Resources on the Internet: A Case Study of Relevant Sites

Ibrahim Alhaji Usman<sup>1</sup>  
Promise Ifeoma Ilo<sup>2</sup> &  
Joan Ogwa Idoko<sup>3</sup>

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## Abstract

The study identifies, evaluates and compiles accessible and useful Web resources on Human Immune-deficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) for the benefit of librarians, researchers, health workers, community workers who work with HIV/AIDS patients. It covers various aspects of the subject namely, treatment, clinical trials, newsletters, journals, nutrition, bibliography links and International organizations, concerned with HIV/AIDS. Out of the numerous websites that were visited, only 50 were found to be accessible and authoritative. The study ends with recommendation on how services of librarian can be enhanced in terms of provision of useful information on HIV/AIDS.

**Keywords:** Internet, HIV/AIDS, Websites, Library, Information technology

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## Introduction

Resources on Human Immune-deficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) have grown exponentially in recent times, particularly in the World Wide Web. The proliferation of available Web sites in the subject has reached a point whereby mega sites or lists of resources have begun to appear. Yet despite this proliferation of information, it is observed that there is scanty relevant and reliable information on HIV/AIDS Internet Web resources. Librarians need to have information

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<sup>1</sup> Corresponding Author & Director of Digitalization Department, National Library of Nigeria, Abuja, E-mail: [uscoma@yahoo.co.uk](mailto:uscoma@yahoo.co.uk), Telephone: +234-803-592-0491.

<sup>2</sup> Department of Library Services, Covenant University, Otta, Nigeria Email: [feomilo\\_2005@yahoo.com](mailto:feomilo_2005@yahoo.com), Telephone: +234-805-673-9608.

<sup>3</sup> National Bibliographic Control Department, National Library of Nigeria, Abuja. Email: [ogwaidoko@yahoo.com](mailto:ogwaidoko@yahoo.com)

that is accessible, available, stable, relevant, authoritative and easily accessible on the Internet regarding this subject.

The challenges of collating and developing accessible information resources have been reported by Hayati and Jowkar (2008), in a study on the adoption of electronic reference materials in academic libraries of Iran. The study identified that the “most effective factors in adoption of electronic reference materials are the ability of electronic reference materials to facilitate information retrieval, shortening the time of searching and fair cost reference”. Similarly, Munnolli (2005) conducted a situational study of harnessing the on-line resources and revealed that “Librarians and information science professionals should take a lead role in unveiling all such possible features available in various on-line databases”. Munnoli further stated that they “should also make efforts at informing the user community of the utility of such features in a bid to enhance the research output”.

It is in view of the foregoing that this study was conducted with the aims and objectives of publishing the result for researchers, field health workers, extension staff, community workers working with AIDS patient and librarians to find easily what is important, stable and relevant to them regarding HIV/AIDS resources.

## **Statement of the Problem**

The Internet has created both great excitements for information specialists, in terms of easy access to data, and problems in terms of what is relevant and accessible. The first problem is associated with the nature and pace of growth of information resources. This growth of information has increased exponentially over the years, making it difficult to find what is reliable and relevant. The other concern relates to the characteristics of the materials available on the Internet some of which are of poor and unreliable quality. A related challenge is the huge volume of resources competing for attention: a wide variety of materials for individual to select, the materials are prone to changes; some are irrelevant to user needs, while many are not authoritative. Hence this study was designed to compile some reliable Web sites for researchers and librarians on the issue of HIV/AIDS.

To find solution to this problem, the study provides prescriptive ways of how Librarians, Information professionals and Researchers could achieve efficiency and effectiveness of searches over the Internet.

## **Aims and Objectives of the Study**

The study examined various Web sites using Internet Scout Project Selection criteria, Smith Alastair G (1997) criterion, and other definitions, such as usefulness, in-depth, freely available, well organized and easy to access or navigates. The study therefore:

1. Examines the Web sites that are relevant, authoritative, stable and not easily prone to change.
2. Ascertain usefulness, persistence and accessibility of the Web sites
3. Compiles Web sites that are noteworthy for those seeking reliable information on HIV/AIDS.

4. Proffers solutions that will save time in Internet searching for information on HIV/AIDS.
5. Provides bibliography list of Web sites that will provide effective and efficient information on HIV/AIDS research.
6. Provides efficient links or good starting points to many other useful and relevant Web sites.

## Literature Review

A number of empirical studies have been reported in the literature in respect of searching for information on the Internet. A key to resource selection in the print environment is the use of reviews. A number of authors have considered criteria for evaluation of information sources. Many are interested in the criteria developed by Katz (1969) for the evaluation of print reference tools, such scope, content, current, relevant, authoritative and usefulness. Sherry Piontek and Kristen Garlock (1996) refer to the related area of collection development criteria and argue that

collection development libraries, because of their experience in the areas of collection, organization, evaluation and presentation, are uniquely qualified to create World Wide Web subject resource collections for an academic audience. By learning how to use Internet subject directories and searching sites, and by acquainting themselves with basic HTML tags, these librarians can create guides which can become valuable tools for all Internet users. In the process, they can also expand their own library collections by providing access to networked information which would have otherwise been inaccessible to their users.

Rettig (1995) noted that the consistent, authoritative reviews of Internet information resources are not yet widely available and situation remained same. Boyd R. Collins (1996) states that the first priority is to find trustworthy source on the Internet, while Diane Kovacs et-al (1994) sees a role for librarians in assisting users to be critical of source. Further, Piontek and Garlock (1996) make a distinction between sites that only provide links to other resources and those that provide original information. This is similar to Katz's distinction between control-access-directional sources like bibliographies as well as indexing and abstracting services and source-type works like encyclopedia and fact-books.

Crichlow, Davis and Winbus (2004) examined the Internet references in the articles of five major medical journals that were published in January 2004, and, by cutting and pasting the Universal Resource Locator (URLs) into a Web browser, found that five were inaccurate and three had inaccessible sites. Judit Bar-Ilan and Bluma C. Peritz (2004) conducted a broad-ranging study of Web pages concerning the subject "informetrics". They looked at the number of Web sites retrieved on this subject in 1998, 1999, 2002, and 2003 and identified 866 URLs in 1998 that met their search criteria. Of those, 299 (34.5 percent) were not available in 1999, with 496 (57.3 percent) and 552 (63.7 percent) not available in 2002 and 2003, respectively. Of the 1,297 URLs identified in 1999, 643 (49.6 percent) were not available in 2002, and 769 (59.3 percent) not available in 2003. Of the 3,746 URLs identified in 2002, 682 (18.2 percent) were not available in 2003. This confirmed the instability of some web resources.

Cited content was considered to be accessible if, after failing to find it at the URL included in the citation or at a referred page, the researchers were able to locate it elsewhere on the Web. Zhang and Lane (2001) developed a short list of excellent Web sites in English and provide brief reviews of those sites for librarians, agriculture researchers and professionals. This study has a particular interest of listing the relevant, authoritative and easily access resources related to HIV/AIDS.

## Methodology

In order to have successful results, data was obtained from the Internet using a variety of different search engines and multi search engines like the dogpile.com, google.com and the invisible.com together with index search terms like Boolean search method were used. These searches produced numbers of Web sites on HIV/AIDS, which were thoroughly checked, screened and considered for selection in the list. The Smith (1997) and Internet Scout project selection criterion was adopted for the exercise. The criteria used for selection of the useful Internet Web sites are as follows:

1. Scope, content, accuracy, purpose, presentation, authority, currency and uniqueness.
2. Usefulness, in-depth and freely available information.
3. Well organized and easy to access or navigate.
4. Provides efficient links or good starting points to many other useful and relevant Web sites.
5. The authority of the source and its richness in terms of information it provides.

Nevertheless, the study is limited to resources that are of general utility to researchers and librarians, while those resources for advertisement were left out. The subjects covered in the study are HIV/AIDS treatment, clinical trials, nutrition, international organizations that are concerned with HIV/AIDS, journals, newsletters and bibliographies links to other important sites. Overall, it can be said that using the Internet Web as a source of HIV/AIDS information offers considerable advantages over traditional paper resources because of its currency and possible links to other information resources, but it has its disadvantage in the area of instability.

## Findings and Subjects covered by the Study

The useful related websites to Human Immune-deficiency Virus (HIV) /Acquire Immune Deficiency Syndrome (AIDS) in seven (7) subject areas are listed below, comprising general introduction, annotations and comments that include the Universal Resource Locator (URL) and brief site description.

### 1. Treatment

Six (6) Internet Web sites are found authoritative based on scope, content, accuracy and stable and are worth searching for HIV/AIDS information.

- Physicians Research Network (PRN), available: [www.prn.org](http://www.prn.org). This is a site that assists Clinicians to master the science and art of caring for people living with HIV disease. It has on the site information concerning diagnosis of new HIV infections, HIV/AIDS therapy, and new medicines developed for HIV/AIDS and new database to help fight against HIV/AIDS. The most interesting feature of the site is that it includes links that lead to good information about HIV/AIDS therapy
- The National Institutes of Health Clinical Centre Complex, available: [www.cc.nih.gov/phar/hiv\\_mgt](http://www.cc.nih.gov/phar/hiv_mgt). This is where clinical biomedical research occurs. It is both a hospital and research centre. It has on it a site map, general information, clinical research studies, healthy living, patient information, special programmes including research and training opportunities at the NIH. The site utilizes a number of colourful graphic icons to orient the user so that one never feels lost.
- The Pharmaceutical Research Manufacturers of America (PHRMA), available: [www.phrma.org](http://www.phrma.org). This is a Web site with information on medications in development, patient assistance programmes, publication and news room. Other information on the site includes safety, innovation, education and issues. It contains a well-chosen selected links relevant to pharmaceutical research.
- United States of America Department of Health and Human Services Aids info Service, available: [www.aidsinfo.nih.gov](http://www.aidsinfo.nih.gov). This site offers information on HIV/AIDS treatment, prevention and research. Information such as guidelines for the treatment of HIV/AIDS reviewed and updated information by experts in the field, fact sheets on HIV/AIDS-related drugs, studies on drugs, vaccines and other new or existing treatment as well as Information on preventative and therapeutic HIV vaccine, research, resources on HIV/AIDS related topics. It is very informative and good for consultation.
- The Alternative Medicine Homepage, available: [www.pitt.edu/~cbw/hiv.html](http://www.pitt.edu/~cbw/hiv.html). This site comprises of databases, Internet resource, Mailings lists and newsgroup, AIDS & HIV practitioners' directories and related resource. The site not only maintains useful links to alternative and complementary therapies HIV/AIDS information, but it presents it in a format that is extremely user friendly.
- National Centre for Complementary and Alternative Medicine [www.nccam.nih.gov](http://www.nccam.nih.gov). This site provides information on health, research grant application, research funding opportunities and published results. Information on clinical trials, A-Z list by keyword search, training, career development opportunities and continuing education series

## 2. Clinical Trials

Clinical trials are very important area on HIV/AIDS research; nine listed Web sites are found relevant and worth visiting based on the criteria mentioned.

- National Centre Institute, Aids Malignancies Consortium (AMC), available: [www.amc.uab.edu](http://www.amc.uab.edu). This is a US-based project that was funded in 1995 to support innovative trials for AIDS-associated Malignancies. AMC is composed of 14 main clinical trials sites and their affiliates, operations and statistical canthers. The site is committed to enhancing therapeutic options for patients with AIDS associated malignancies.
- The Aids Vaccine Evaluation Group (AVEG), available: <http://scharp.org>. This is an initiative that carried out early stage testing of vaccine. It provides a link to [www.hvtn.org](http://www.hvtn.org) which provides information on vaccine trials. This site offers descriptive and evaluative information about vaccine.
- The Community Programmes for Clinical Research on Aids, available: [www.cpcra.org](http://www.cpcra.org). This is an experienced community based clinical trials network whose main goal is to obtain evidence to properly inform healthcare providers and people living with HIV. It has smart information trial available on link [www.smart-trial.org](http://www.smart-trial.org) and smart plenary slide sets and integrating HIV research.
- US National Institute of Health Clinical Trials Project, available: [www.clinicaltrials.gov](http://www.clinicaltrials.gov). This site is sponsored primarily by the National Institutes of Health and other Federal agencies. It provides information on clinical trials, HIV-related diseases and conditions. The site has links to many conventional resources that are available.
- Centre Watch, available: [www.centerwatch.com](http://www.centerwatch.com). This site provides lists of clinical trials each with annotation. There are over 25,000 clinical trial listings. It also provides a comprehensive listing of HIV/AIDS information. A separate and potentially useful section of the site is devoted to AIDS.
- ACTIS, available: [www.actis.org](http://www.actis.org). The site provides selected HIV/AIDS clinical trials databases. There are many links on this site to HIV resources. It serves as a bibliography and reference source for retrieval of information.
- HIVNET, available: [www.hivnet.ubc.ca](http://www.hivnet.ubc.ca). This site is designed and maintained by Canadian HIV Trials Network. It contains useful information on research for treatments, prevention and cure.
- The International Maternal Paediatric Adolescent AIDS Clinical Trials Group maintained the Web site, available: <http://pactg.s-3.com>. This is a mega site featuring hundreds of resources, but the relatively small numbers of links presented appear to have been carefully selected.
- Adults AIDS Clinical Trials Group <http://www.aactg.org/> This is the largest HIV clinical trials organization, plays a major role in defining the standards of care for treatment of HIV infection and opportunistic diseases related to HIV/AIDS around the world. There are resources for general public, patient and clinicians. Also general information about clinical trials process and a list of trials that is open for enrolment. Contact information about HIV/AIDS clinical researches being conducted are available for information seekers.

### 3. Palliative & Nutritional Care

In the area of palliative and nutritional care for people living with HIV/AIDS, the following listed Web sites are found relevant for researchers

- The American Dietetic Association, available: [www.eatright.org/public](http://www.eatright.org/public). This site offers information bill board of promoting optimal health and well-being. Selected topics linked to Web resources in the area of HIV/AIDS treatment and diet. The collection of links is well annotated.
- The Association of Nutrition Services Agencies, available: [www.aidsnutrition.org](http://www.aidsnutrition.org). This contains information on general nutrition of people living and affected with HIV/AIDS.
- Tufts University Resources available: <http://www.tufts.edu/med/nutrition-infection/hiv/health.html>. The site, maintained by Tufts University, provides information on research, HIV resources, tufts nutrition collaborative, nutrition academic award programme and nutrition for healthy living.
- New York Academy of Medicine Library HIV/AIDS information outreach Project, available: [www.aidsnyc.org](http://www.aidsnyc.org). This site provides information to/on HIV and AIDS-related, community based organizations in the New York area. The Web site links to community based organization with HIV/AIDS information outreach project. There is enormous number of links that is collected here and each is annotated.
- Food and Nutrition Technical Assistance II (FANTA-2), available: <http://www.fantaproject.org>. FANTA-2 works to improve nutrition and food security policies, strategies and programs through technical support to the U.S. Agency for International Development (USAID) and its partners, including host country governments, international organizations and NGO implementing partners. Focus areas for technical assistance include maternal and child health and nutrition, HIV and other infectious diseases, food security and livelihood strengthening, and emergency and reconstruction. FANTA-2 develops and adapts approaches to support the design and quality implementation of field programs, while building on field experience to improve and expand the evidence base, methods and global standards for nutrition and food security programming. The project, funded by USAID, is a five-year cooperative agreement.
- Schools & Health, available: <http://www.schoolsandhealth.org>. This site is managed by the *Partnership for Child Development* which comprises diverse organizations including World Health Organization (WHO), United Nations Children's Fund (UNICEF), the World Bank, Pan-American Health Organization, World Food Program (WFP) and Save the Children. The site aims to provide information on "improved learning through better health, nutrition, and education for the school-age child". While the working language of this website is English, school health, nutrition, HIV and AIDS documents are available for download in diverse languages, including Spanish, Portuguese, Russian, Kiswahili, and Arabic.

- World Health Organization (WHO), available: <http://www.who.int/nutrition/topics/hivaids/en/index.html>. As the directing and coordinating authority for health within the United Nations system, the WHO manages this site to provide up-to-date information on nutrition and other relevant topics on HIV/AIDS. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries and monitoring and assessing health trends.
- The United Nations Standing Committee on Nutrition, available: <http://www.unsystem.org>. The SCN Nutrition and HIV/AIDS webpage aims to provide nutrition/health practitioners/development workers with pertinent and up-to-date information in the major areas of research and programmes linking nutrition and HIV/AIDS. The information provided under the 12 subject topics below has been obtained from biomedical journals, general reports, and conferences. The articles and reports are mostly accessible through the internet and cover the years 2002-2008. In the future, we anticipate including grey literature, which is typically not found in the public domain, provided it contains quality information.

The foregoing references are by no means exhaustive, but they do provide a selection of reliable and authoritative sites where specialist information can be easily accessed.

#### 4. International Organizations

Seven International organization Web sites were found worth searching for relevant information on HIV/AIDS

- United Nations Programme on HIV/AIDS, available: [www.unaids.org](http://www.unaids.org). The site provides a database of estimated number of AIDS cases and HIV infections country by country, focus on high-level meeting on AIDS, UNGASS reporting, Technical guidance, AIDS epidemic update regional summaries. Also, there are information on policy and practice, country responses, partnerships and knowledge centre.
- International Labour Organization (ILO), available: <http://www.ilo.org/public/english/protection/trav/aids/>. This site hosts core documents like, the ILO Code of Practice on HIV/AIDS, implementing the ILO Code, HIV/AIDS behaviour change communication: a toolkit for the workplace, legislation and policies, research and policy analysis, HIV/AIDS and work: global estimates, impact on children and youth and responses.
- Centre for Health Information and Technology, available: [www.healthnet.org](http://www.healthnet.org). The site provides AIDS forum designed to allow an exchange of AIDS information for health professionals. The aim is to stimulate the development of knowledge networks and ICT health.
- Baylor International Paediatric AIDS Initiative, available: <http://bayloraids.org>. This site contains information on instructional cases and materials, paediatric HIV



atlas, HIV curriculum, educational resources, nursing questions and answers and five countries where it operates namely Huston, Romania, Botswana, Uganda and Mexico.

- International AIDS Vaccine Initiative, available: [www.iavi.org](http://www.iavi.org). This site is maintained by the International AIDS Vaccine Initiative which aims to ensure the development of safe, effective, accessible, preventive HIV vaccines for use throughout the world. The site has information on AIDS vaccine news, vaccine science and global access.
- World Health Organization, available: [www.who.int](http://www.who.int). This is multi-lingual user-friendly site that aims to provide reliable information on HIV and AIDS. In addition to country reports, the site hosts information on health topics, forthcoming events worldwide, and press releases.
- Hiv Vereniging Nederland, , available: [www.hivnet.org](http://www.hivnet.org). The site is designed in Dutch language, but has links to other Web sites. It also has chat and discussion forum. The site is designed and maintained by Net Information Server (Netherlands). There publications and booklet in HIV and information on living with HIV.

## 5. Journals

Eight Journal worth searching and relevant in the HIV/AIDS subject area are as follows:

- *Positive Nation*, available: <http://www.positivenation.co.uk/>. This is an HIV and sexual health magazine based in the United Kingdom. It is published by UK coalition of people living with HIV and AIDS. The print edition of the magazine is free to anyone living with HIV/AIDS in the United Kingdom.
- *The New England Journal of Medicine (NEJM)*, available: <http://content.nejm.org/>. This is an on-line journal containing easily accessible current and archived resources. It contains lots of information on HIV/AIDS and other diseases.
- *Aidonline*, , available: [www.aidsonline.com](http://www.aidsonline.com). This is an on-line journal of the International AIDS Society. It contains latest ground breaking research on HIV/AIDS with links to several categories of Web sites.
- *Aidsinfonyc*, available: [www.aidsinfonyc.org/hivplus/](http://www.aidsinfonyc.org/hivplus/). This is an on-line magazine can be searched based on issue and subject.
- *Journal of Infectious Diseases*, available: [www.cdc.gov/ncidid/eid/](http://www.cdc.gov/ncidid/eid/). This is a journal maintained by the Centre for Disease Control and Prevention. It is peer-reviewed journal tracking and analyzing disease trends. Current and past issues can be searched through keywords.
- *British Medical Journal*, available: [www.bmj.com](http://www.bmj.com). This is a peer-reviewed journal dealing with medical issues including HIV/AIDS. It also hosts resources on health news and careers in United Kingdom.

- *Medscape*, available: <http://www.medscape.com/hiv/journals>. The journal is designed and maintained by Med-scape. It provides comprehensive and relevant clinical information to improve patient care; and make the clinician's task of information gathering simpler, more fruitful, and less time-consuming. It also provides physicians with the educational tools needed to stay current in their practice.
- *Journal of American Nursing*, available: [www.nursingcenter.com](http://www.nursingcenter.com). This is one of the oldest and largest circulating on-line journals world-wide. The Website of the journal offers the opportunity to search for current and archived journal articles.

## 6. Newsletters

There are six Web sites related to Newsletter that are worth searching by HIV/AIDS information seekers.

- *Bulleting of Experimental Treatments of AIDS (BETA)*, available: [www.sfaf.org/beta](http://www.sfaf.org/beta). The aim of the newsletter is to provide information on prevention policy, treatment, resources on HIV/AIDS. BETA includes in-depth articles on HIV prevention technologies and approaches, as well as HIV treatment and strategies for living well with HIV. It is published biannually in English and Spanish by the San Francisco AIDS Foundation.
- *PositiveWords.com*, available: <http://www.positivewords.com/>. This is a free, easy-to-use newsletter service designed to assist community-based providers in delivering appropriate, credible and timely health management information and support to people living with HIV.
- *Rush University Medical Centre Newsletter*, available: <http://www.hivnewsletter.org/>. This newsletter provides relevant clinical information from many of the leading experts in HIV and AIDS medicine.
- *Doctor's Guide to Medical & Other News*, available: [www.pslgroup.com/dg/hivaidsnews.htm](http://www.pslgroup.com/dg/hivaidsnews.htm). This is an on-line publication that covers a wide range of topics including information about specific anti-HIV therapies, diagnosis and treatment. The information is arranged alphabetically or by subject. Information can also be searched by keyword.
- *AIDS Education and Training Centre Newsletter*, available: <http://www.aidsetc.org/>. This newsletter provides information to educate, raise awareness and build community. Information such as AIDS treatment news, nutrition and other vital information on the disease are reported.

## 7. Bibliographic Databases

Five Web sites were found relevant and worth searching by researchers in the subject area of bibliography

- <http://www.cdc.gov/hiv/topics/testing/bibliography.htm>: This site is designed and maintained by Centre for Disease Control and Prevention. It has databases that are constantly updated. It is keyword searchable.
- <http://mensbiblio.xyonline.net/>: This site has updated information with links to the latest resources. It is good starting place for new researchers
- <http://www.medguide.org.zm/aids/aids.htm/>: This site is maintained by the University of Zambia Medical School with information on HIV/AIDS in Africa; organized in a series of an annotated bibliography containing information on HIV counseling and prevention.
- [http://www.hivpolicy.org/bib/browse\\_g\\_bib.htm/](http://www.hivpolicy.org/bib/browse_g_bib.htm/): This site is designed and maintained by HIV Policy Organization. It is an on-line database of HIV/AIDS policies for the Asia pacific region.
- [www.simmons.edu/](http://www.simmons.edu/): Simmons University created and maintained this Web site, it is user friendly, searching by format and subject is allowed. It contains information on electronic indexes, journals and news.

## Data Presentation

A total number of 200 Web sites were visited within the period of 90 working days, out of these numbers 50 sites have been found authoritative, while seven (7) subjects namely treatments, clinical trials, nutrition, international organizations, journals literatures, newsletters and bibliography links were designated for the research as shown on table 1 below

**Table 1: Distribution of Sites by Subjects**

S/ N	Subjects	Number of sites
1.	Treatment	6
2.	Clinical Trials	10
3.	Nutrition	8
4.	International Org	7
5.	Journals	8
6.	Newsletters	6
7.	Bibliography links	5
	<b>Total</b>	<b>50</b>

Table 2 shows that highest number of Web sites found worth of searching are on treatment and clinical trial with 10 Web sites each or 20% of the total number of Web sites visited within the period of 16 working days allotted to it.

**Table 2: Reliable Sites**

S/N	Subjects	No. of sites visited	Reliable sites	%
1	Treatment	35	6	12
2	Clinical Trial	35	10	20
3	Nutrition	30	8	16
4	International Org.	20	7	14
5	Journals	30	8	16
6	Newsletters	20	6	12
7	Bibliography links	20	5	10
<b>Total</b>		<b>200</b>	<b>50</b>	<b>100</b>

## Discussion

The responsibility of orienting the Internet user has been left or occupied by the search engines. Specialised and voluntary initiatives for referral begin to appear in various fields trying to offer an information seeking context for resources targeted to specific groups of users. Information professional and librarians can put on the Internet their views and exploit their skills to create content-oriented Web referral to clientele. They can in this way contribute to resolve access barriers to knowledge mining. The filtering and selecting operations are indispensable to adding value to the huge amount of resources that are produced by institutions

Moreover valid knowledge organization in targeted context may be extremely useful. It can open up new spaces or tracks in the network and guide the user to find the right information at the right time.

## Recommendations

In the light of the emerging information society with a view of saving time for researchers and librarians through the provision of relevant Web site, the following recommendations are made for the benefit of librarians and information scientists:

1. Periodical connections or requests for notification of Uniform Resource Locator modification from institutions are vital to all services and particularly to referral documents and services; librarians should constantly check and update this information for their client.
2. Internet referral is not a static thing but a life-cycle process. It requires the building of a dynamic framework sensible to major variations and modification. To this end librarians should activate bilateral communication with institution whose Web site is considered an information resource for the library service.
3. There should be appropriate methodologies and techniques to design a new generation of user aids and referral services adequate to the Internet information world.

4. Internet resources should be identified with a working mechanism to embed resources description elements.
5. There should be periodical conference of librarians and other information professionals to chat the way out for providing researchers with relevant Web sites for their research.

## **Conclusive Remarks**

The Internet provides a rich minefield of data and resources, on almost every issue, for individuals and organizations. In terms of HIV/AIDS, the study reveals that there a plethora of sources. However, the study found that not all sites are reliable or efficient. Thus, we conclude that concerted efforts is needed from the parts of Library and Information workers to filter relevant Internet resources, as a complementary mechanism for deriving reliable information from search engines. This can also go a long way to reduce the difficulties in locating the relevant materials needed by researchers and librarians. It is in this view that librarians and information professionals should work hard to provide easy access to relevant information on the Internet.

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