

## Online Access to Mental Health Information

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OVER THE PAST DECADE, the boundaries of the traditionally small- to medium-sized mental health library have been stretched by the advent of relatively inexpensive, publicly available online data bases. The National Library of Medicine (NLM), Lockheed Information System, Systems Development Corporation (SDC), and the Bibliographic Retrieval Services (BRS) together provide access to well over one hundred data bases, many of which contain information relevant to mental health. The impact on reference service has been profound. Librarians, as the intermediaries between requestors and the online services, are drawn into a more active role in research, clinical care and professional and public education.

The majority of the commercially available data bases useful to mental health are bibliographic in nature, providing citations to published or unpublished articles, reports, dissertations, audiovisuals, etc. Some, like *Psychological Abstracts* or MEDLINE, are based on printed indexes which continue to be available in hard copy. Others, such as the data base of the National Clearinghouse for Mental Health Information (NCMHI), have no print equivalent. Still other data bases do not provide citations to printed material, but rather contain primary information. (An example is CHEMLINE—an online chemical dictionary available through the National Library of Medicine. A typical record for a particular drug provides its chemical formula, registry number, structural make up, and various marketed trade names, as well as locator

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guides to other data bases in the NLM online system which contain both primary information and citations to articles about that drug.)

Mental health, as a field of study, forms a bridge between the hard, or physical, sciences and the social sciences. Contributions from disciplines as diverse as neurology, physiology, genetics, toxicology, psychology, sociology, family dynamics, and anthropology all help to explain the complex interplay of biological, psychodynamic and environmental factors which are responsible for human behavior. Not surprisingly, there is no single data base which contains all the information needed to answer any mental health question. Indeed, Knapp lists forty-eight data bases relevant to the behavioral and social sciences.<sup>1</sup> The multiplicity and variety of data bases demand careful decision-making by the retrieval specialist. As Klugman notes: "the search results will vary depending upon which system the librarian has access to or has chosen to use. Results will also vary depending on the person who performs the search."<sup>2</sup>

There are, however, four major online files which together provide coverage of the many different aspects of mental health. These are: (1) PsycINFO, corresponding to the printed *Psychological Abstracts*; (2) the National Clearinghouse for Mental Health Information; (3) Social SciSearch, corresponding to the *Social Sciences Citation Index*; and (4) MEDLINE, based on, but more comprehensive than, the printed *Index Medicus*. A comparison of the availability, costs, coverage, currency, and update frequency is provided in table 1.

PsycINFO, produced by the American Psychological Association, is available through Lockheed, BRS and SDC, and provides access to materials published from 1967 to the present. It attempts to cover the broad range of psychology, including animal and human studies, as well as neurobehavior, neuropsychology, cognition, child development, and psychopathology. It is particularly strong in educational psychology, psychometrics (testing), and the psychology of speech, language and communication. The data base covers only the major articles from approximately 1000 journals. Editorials, letters to the editor, and articles not deemed to be within the limits of psychology and related disciplines are omitted. The file includes some monographs prior to 1980, and plans to index reviews from *Contemporary Psychology* at a future date. Selected dissertations from the psychology section of *Dissertation Abstracts* are included with detailed subject indexing, but no abstracts.

Each citation in PsycINFO is assigned a content classification code denoting broad subject area, and anywhere from one to eight or more

TABLE I  
MAJOR MENTAL HEALTH DATA BASES

| Name             | Producer   | Availability/Cost   | Coverage  | Updates/Currency                |
|------------------|--|---|---|---------------------------------|
| PsycINFO         | American Psychological Association<br>1200 Seventeenth St., NW<br>Washington, D.C. 20036   | BRS: subscription + \$30/hr. royalty<br>Lockheed: \$65/hr.<br>SDC: \$65/hr.   | 1967—<br>1000 journals, some monographs, dissertations, book reviews<br>Major articles only<br>Abstracts usually available—not for dissertations              | Monthly; 6 month—<br>2 year lag |
| NCMHI            | National Clearinghouse for Mental Health Information<br>National Institute for Mental Health<br>5600 Fishers Lane<br>Room 11A-33<br>Rockville, Md. 20857 | BRS: subscription, no royalty<br>Lockheed: available June 1982 as Mental Health Abstracts at \$30/hr.                             | 1969—<br>1000 journals, monographs, chapters, legal decisions, dissertations, technical reports<br>conference proceedings, audiovisuals<br>Abstracts included | Unclear; approx. 6-12 months    |
| Social SciSearch | Institute for Scientific Information<br>3501 Market St.<br>Univ. City Science Center<br>Philadelphia, Pa. 19104  | BRS: subscription + \$35/hr. or \$70/hr. royalty<br>Lockheed: \$75/hr. or \$110/hr.<br>SDC: \$70/hr.                              | 1972—<br>1400 journals cover-to-cover, 2200 journals selectively<br>No abstracts  | Monthly; 6-12 week lag          |
| MEDLINE          | Natl. Library of Medicine<br>8600 Rockville Pike<br>Bethesda, Md. 20209  | NLM: \$22/hr. prime \$15/hr. nonprime<br>telecommunications included<br>BRS: subscription + \$4/hr. royalty<br>Lockheed: \$35/hr. | 1966—<br>3500 journals, includes letters, biographies, obituaries, editorials<br>Nonbiomedical journals indexed selectively<br>Abstracts usually available    | Monthly; 3-6 month lag          |

subject headings from the *Thesaurus of Psychological Index Terms*.<sup>3</sup> An abstract is included along with an identifier phrase consisting of enriching free-text language. A major problem in the past was the time lag between journal publication and inclusion in the data base; this gap was rarely less than one year, and sometimes two to three years. The situation seems to have improved recently; the time lag for major journals is now approximately six months. The *PsycINFO User Reference Manual*<sup>4</sup> is a helpful guide to the file's indexing practices and retrieval methods. Dolan offers an excellent explanation of the evolution of the data base and the complexity of search formulations, focusing on the BRS system.<sup>5</sup>

The NCMHI data base is a result of the establishment of the clearinghouse in 1963 to identify and organize all mental health related information. The data base is available through BRS, and will be on Lockheed in June 1982. Though the file officially begins coverage in 1969, articles from the early 1960s and even before are often retrieved. Approximately 225 journals, or 25 percent of the data base, are indexed cover to cover, and another 750 journals are selectively included. Coverage of conference proceedings, technical reports, legal decisions, monographs and monograph chapters, some audiovisuals and dissertations, all with abstracts, make this data base particularly valuable.<sup>6</sup>

Searching the NCMHI file generally must be done with free-text language, as each record is only assigned a maximum of three subject terms, drawn from a controlled vocabulary of 119 broad headings. Identifier terms, such as publication type, age limits, human or animal, etc., are also assigned to each record. Updating of the file has been a problem during its first two years of public availability on BRS. Though it is scheduled to be updated monthly, there was one update at the end of 1980, and another partial update in May 1981. As of summer 1981, the future of the data base is uncertain due to the scheduled reduction or elimination of U.S. federal support.

MEDLINE is a comprehensive index to medical and nursing literature. It is timely, with a two- to six-month lag between date of publication and appearance in the data base. Considering its medical orientation, the data base is strongest in mental health areas such as psychopathology, drug therapy, neurology, neuroendocrinology, and the mental health aspects of physical diseases. The most striking aspect of this file is the detailed subject headings given each citation. Both major and minor descriptors are selected by NLM indexers from the hierarchical *Medical Subject Headings*,<sup>7</sup> which is revised yearly and rigidly maintained. Detailed guidelines exist regarding the selection of

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subject terms by both indexers and searchers. The result is a data base most effectively searched by use of controlled vocabulary rather than free text terms, and yielding a consistent retrieval.

Social SciSearch is the data base with broadest coverage; 1400 journals are regularly indexed cover to cover, and 2200 others are indexed selectively. The average time lag between date of publication and appearance in the data base is six to twelve weeks. The unique aspect of this file is citation indexing, which allows an article from the past to be updated by tracing where that article has been cited. Often a search of the other data bases will yield relevant older articles on a particular topic, perhaps a treatment technique, and a citation search will lead to newer studies evaluating the application of that technique. The benefits of citation searching have been thoroughly described elsewhere.<sup>8</sup> Aside from a broad list of two-letter concept codes available only through the BRS system, there is no subject indexing. Searching words in title, analogous to using the Permuterm section in the printed *Social Sciences Citation Index*, is the only subject approach available to the searcher. A number of published articles discuss searching Social SciSearch online.<sup>9</sup>

These four core data bases are widely available through commercial vendors, with beginning date of coverage ranging from 1966 to 1972. Epstein and Angier have compared the coverage of PsycINFO, MEDLINE and Social SciSearch in relation to 361 core psychology journals.<sup>10</sup> It was found that PsycINFO and Social SciSearch covered, respectively, 89 percent and 66 percent of the core journals. Though MEDLINE was found to include only 33 percent of the titles examined, it undoubtedly covers a greater percentage of psychiatric, pharmacological and neurological journals, which were not included in that study.

The number of journal titles indexed by a particular file is only one important factor for comparison. Depth of coverage is an equally significant factor. Are journals indexed cover to cover, as in Social SciSearch, or selectively, as are some in MEDLINE and PsycINFO? What is the time lag for inclusion in the file? How frequently are the files updated? What other types of publications, such as dissertations, audiovisuals, monograph chapters, proceedings, or legal decisions, are included? All of these questions are important when evaluating the data bases, and determining the type of output that can be expected.

One method of comparing the access points in each data base is to examine the various ways that one article is entered into the four different data bases. The article selected was published in the June 1980 issue of the *American Journal of Psychiatry* and entitled, "Burnout in

Group Home Houseparents." The author described responses to a questionnaire by male and female houseparents in a group home for emotionally disturbed adolescents measuring "burnout" (reaction to job stress characterized by exhaustion, depression or withdrawal), a popular term often used in the literature. Since the *American Journal of Psychiatry* is the official journal of the American Psychiatric Association, and hence one of the basic periodicals in mental health, one would expect it to be included in all four major data bases, and probably many others as well. However, the indexing and access points vary greatly. The concept of "burnout" has not been added to the thesaurus of any of the data bases; therefore, a study of the assigned index terms can aid the searcher in expanding the search topic and determining how similar articles could be retrieved (see table 2).

It is clear that MEDLINE and PsycINFO provide the most helpful subject headings and lead the searcher to other related topics, such as "occupational stress" and "job satisfaction." There are also some misleading subject terms: "therapeutic-community" in MEDLINE is ambiguous as a major descriptor. It is unclear in the article whether these group homes are technically therapeutic communities. "Emotionally-disturbed" in PsycINFO is so vague as to be virtually useless. The two subject terms in NCMHI are similarly unhelpful, and there is no subject indexing in Social SciSearch. It is also instructive to compare how long it took this article, published in June 1980 in a major periodical, to be added to the data bases. In MEDLINE and Social SciSearch, the article could be retrieved by about mid-August, a lag of two months, while the citation was not available until February 1981 on both NCMHI and PsycINFO, a lag of over six months.

Thus, it is apparent that for routine mental health questions, there is no perfect data base. Social SciSearch provides the most timely access to a broad range of journals, but only through citation indexing and title words. MEDLINE is current and well indexed, and emphasizes the clinical, psychiatric side of mental health. NCMHI is neither current nor well indexed, but provides the most comprehensive coverage of all aspects of the field. PsycINFO also has a persistent time lag, but does provide excellent subject access.

Aside from the four main data bases, there are a number of special purpose files, all of which deal with a limited topic, such as drug abuse, or a limited area of coverage, such as audiovisuals. Though not routinely used, these prove valuable for addressing specific questions. The data bases focusing on a particular mental health area are Child Abuse and Neglect (Lockheed), Drug and Alcohol Abuse (BRS), Epilepsyline

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TABLE 2  
ACCESS POINTS IN MAJOR MENTAL HEALTH DATA BASES

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Thompson, James W. "Burnout in Group Home Houseparents." *American Journal of Psychiatry* 37(Jan. 1980):710-14.

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| <i>NCMHI</i>   | <i>Social SciSearch</i>   |
| Descriptors:<br>Manpower-and-training<br>Occupational-mental-health  | No descriptors<br><br>BRS Concept code: VE = psychiatry   |
| Identifiers:<br>Journal<br>Human<br>Research   | 12 bibliographic references listed;<br>article could be retrieved by a subject<br>search  |
| Good abstract  | No abstract   |
| <i>PsycINFO</i>  | <i>MEDLINE</i>  |
| Descriptors:<br>Human-sex-differences<br>Emotionally-disturbed<br>Adolescents<br>Occupational-attitudes<br>Occupational-stress<br>Childcare-workers<br>Work-attitudes-toward | Major descriptors:<br>Affective-disturbances/therapy<br>Motivation<br>Community health services/manpower<br>Job-satisfaction<br>Therapeutic-community |
| Concept code:<br>Professional personnel &<br>professional issues   | Minor descriptors:<br>Adolescence<br>Adult<br>Emotions<br>Female<br>Human<br>Male   |
| Identifier phrase:<br>job and personal characteristics;<br>burnout; houseparents of group home<br>for emotionally disturbed adolescents                                      | Salaries-and-fringe-benefits<br>Sex-factors   |
| Good abstract  | Good abstract   |

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(NLM), and Bioethicsline (NLM). The first of these, Child Abuse and Neglect, is produced by the National Center for Child Abuse and Neglect in Washington, D.C. It is a very small file with abstracts, containing records of ongoing research projects and service programs in the United States, as well as bibliographic citations to books, periodicals, conference proceedings, and government and research reports. Because it is limited in scope, a search of this data base should be supplemented by one or more of the other mental health data bases.

The Drug and Alcohol Abuse data base is a merger of DrugInfo and Alcohol Use/Abuse and contains citations from two separate agencies: The Drug Information Service Center at the University of Minnesota

College of Pharmacy, which currently updates the file; and the Hazelden Foundation in Center City, Minnesota, which has not added any citations since 1978. The DrugInfo portion provides access to monographs, journals, conference papers, instructional guides, and films, and emphasizes the psychological, educational and sociological aspects of both alcohol and drug use. It also has abstracts of the citations. The Alcohol Use/Abuse portion "contains articles, reprints, unpublished papers, and chapters from books which deal primarily with the evaluation of treatment, the chemically dependent female, family therapy and the MMPI (Minnesota Multiphasic Personality Inventory), with minor emphasis on the elderly and the adolescent."<sup>11</sup> Because of the uneven nature of the file content, and the lack of detailed documentation, this data base should only be considered as a supplement to the major data bases already discussed.

The epilepsy data base has the distinction of being the only data base available free of charge through NLM or any other service. It is produced by Excerpta Medica, which publishes the monthly *Epilepsy Abstracts* under contract to the National Institute for Neurological and Communicative Disorders and Stroke (NINCDS). The major mode for searching the file is with free-text words from the title, abstract and keyword field. There are also two-digit classification codes denoting broad topics such as case reports, epidemiology, genetics, etc. Keywords are assigned by Excerpta Medica, but there is no accompanying thesaurus. There are abstracts. This file remains a significant and low-cost entry point into the epilepsy literature.<sup>12</sup>

The Bioethics file, also available exclusively through NLM, deals with the study of value questions arising in health care or biomedical research. Important mental health topics addressed include informed consent, patients' rights, involuntary commitment, research on the mentally handicapped, psychoactive drugs, and psychosurgery. The data base was developed at the Kennedy Institute of Ethics at Georgetown University, and corresponds to the printed *Bibliography of Bioethics*.<sup>13</sup> Included are journal and newspaper articles, monographs, court decisions, bills, laws, and audiovisuals. There are no abstracts in the data base. Catline, MEDLINE, The Bibliographic Citation File of the Library of Congress, and the New York Times Information Bank, as well as sixty indexes and seventy journals and newspapers, are all routinely reviewed for pertinent citations.<sup>14</sup> Multiple access points are provided as each unit record is indexed with terms from the *Bioethics Thesaurus*, published as part of the *Bibliography of Bioethics*, and from *Medical Subject Headings*.



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Locating audiovisual materials can be a vexing problem in mental health, as in other fields. Some of the data bases already discussed, such as Bioethicsline, Child Abuse and Neglect, DrugInfo, and NCMHI, include citations to audiovisuals. Three data bases are devoted entirely to audiovisuals: AVLINE (NLM), NICEM/National Information Center for Education Media (Lockheed), and NICSEM-NIMIS/National Information Center for Educational Materials-National Instructional Materials Information System (Lockheed, BRS).

AVLINE is compatible in vocabulary and format with the other NLM data bases. Detailed loan and purchase information is provided. Eighty percent of the data base consists of educationally designed programs selected through a peer review process and includes lengthy abstracts. The other 20 percent is documentation of lectures, continuing education courses, etc., which are reviewed for technical quality but not abstracted.

NICEM is by far the largest audiovisual data base, covering non-print educational materials for all levels from preschool to postgraduate. Psychology and mental health comprise but one small part of the entire data base. NICSEM-NIMIS covers media and materials used in the education of children with physical and mental handicaps, and is less than one-tenth as large as NICEM. Van Camp compares and contrasts all the above-mentioned audiovisual data bases, as well as others in the health sciences, and provides descriptions of the files, searching aids and print equivalents.<sup>15</sup>

Information on grants and funding sources becomes increasingly vital as mental health institutions seek to maintain research, clinical and educational projects in an era of shrinking budgets. Angier and Epstein discuss both nonbibliographic and bibliographic data bases dealing with grant funding.<sup>16</sup> The former, including Foundation Directory (Lockheed) and National Foundations (Lockheed), provide basic information on private nonprofit organizations. The Foundation Directory contains descriptions of over 2500 foundations which have assets of more than \$1 million or which award grants of at least \$500,000. This file is supplemented by National Foundations, which describes smaller organizations.

The bibliographic data bases, SSIE Current Research (Lockheed, BRS, SDC), Foundation Grants Index (Lockheed) and Grants Index (SDC), describe specific grants awarded, including funding, primary investigators, and sponsoring and performing organizations. SSIE Current Research, produced by the Smithsonian Science Information Exchange, lists research and clinical projects funded by federal and

some nonfederal agencies. Foundation Grants Index does the same for over 400 major private foundations in the United States. Grants Index includes grant references offered by federal, state and local governments, commercial organizations, associations, and private foundations. By searching the five grant files, researchers and clinicians can locate sources of program support or funding for purchase of equipment, avoid duplication of other projects, locate individuals with subject expertise, and identify gaps in current research.

In addition to all the specific-purpose files discussed above, there are a number of privately produced data bases pertinent to mental health. The best known of these is the the Lithium Librarian.<sup>17</sup> This computerized system, produced by the Lithium Information Center at the University of Wisconsin-Madison Center for Health Sciences, organizes and provides access to the world's literature on lithium, a drug widely used for treatment and prophylaxis of bipolar affective disorder (manic-depressive psychosis) and under investigation for many other uses. Potential users of the data base can access the Lithium Librarian either by contracting with the Lithium Information Center and searching the system for a small hourly charge, or by having a literature search conducted by an information specialist at the Lithium Information Center. If necessary, article reprints will be duplicated and mailed upon request.

A similar service is performed by the Spanish Speaking Mental Health Research Center at the Department of Psychology, University of California at Los Angeles.<sup>18</sup> The Center maintains a small data base of bibliographic references pertaining to the mental health of Hispanics in the United States, including such topics as bilingualism and educational and family issues. The data base developed as a result of the compilation of *Latino Mental Health: Bibliography and Abstracts* and *Hispanic Mental Health Bibliography II* during the mid-1970s.<sup>19</sup> Regular updates are scheduled. Specialized bibliographies are compiled for outside requesters for a standard \$10.00 service fee.

Still another privately developed data base, the National Council on Family Relations Family Resource and Referral Center, deals with literature pertaining to all aspects of family life. In addition to accessing bibliographic citations from the *Inventory of Marriage and Family Literature*,<sup>20</sup> searchers can access a Human Resource Bank, composed of qualified professionals willing to act as contacts for their area of expertise within the family field, and an Idea Bank, comprising short abstracts of planned or in-progress research or clinical projects. The bibliographic entries and the Idea Bank became available through BRS

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in June 1981, with an hourly introductory royalty charge of \$10, which will rise to \$20. The Human Resource Bank will be searched only upon request.

The list of data bases useful in answering mental health questions does not end here. The broad scope and range of the field demand that the searcher consider data bases in a number of other disciplines. Questions of a medical or biological nature, in psychopharmacology, psychophysiology, the neurosciences, or similar disciplines, may also be searched in BIOSIS/Biological Abstracts (Lockheed, BRS, SDC), Excerpta Medica (Lockheed), Toxline (NLM), and SciSearch (Lockheed, BRS). Questions leaning toward the social sciences should be considered for Sociological Abstracts (Lockheed), ERIC/Educational Resources Information Center (Lockheed, BRS, SDC), ECER/Exceptional Child Education Resources (Lockheed, BRS), NARIC/National Rehabilitation Information Center (BRS), and LLBA/Language and Language Behavior Abstracts (Lockheed). Questions of a legal nature can be searched on the Legal Resource Index (Lockheed) or the National Criminal Justice Referral Service (Lockheed), as well as NCMHI and Bioethicsline, which contain legal decisions.

Requests for information specifically directed at the lay public are more common as consumerism and popular health education grow in importance. Patients and their families and friends seek information to help them make well-informed decisions about treatment options and available mental health services. Finally, clinicians will often request popular material to recommend to patients or simply to learn how complicated mental health issues are being presented to the general public. For these types of questions, the New York Times Information Bank, Magazine Index (Lockheed) and Newspaper Index (Lockheed) are invaluable.

The federal government, as the "world's most prolific publisher,....spends billions of dollars in its three branches, collecting, producing, evaluating, analyzing, and publishing data and information results."<sup>21</sup> A significant number of mental health publications can be retrieved from the GPO/Government Printing Office data base (Lockheed, BRS), particularly in the field of drug and alcohol abuse and public education. Access to government statistical publications is provided by ASI/American Statistics Index (SDC). Timely and/or controversial topics are often the subject of congressional hearings, which can be found in CIS/Congressional Information Service Index (SDC, Lockheed). These indexes and others are also discussed by Usdane.<sup>22</sup>

The State Publications Index (BRS) is a comprehensive source for current state documents issued by the fifty U.S. states, Puerto Rico and the Virgin Islands from 1976 to the present. Each document is assigned broad generic terms and subject descriptors from a 5000-term thesaurus, as yet unpublished. "Mental health," "families," "children," "handicapped," "social services," and "senior citizens" are all listed as generic terms.<sup>23</sup>

Finally, psychologically oriented material can be found scattered through any number of data bases in the fields of technology, humanities and business. The humanities files, such as Art Bibliographies Modern (Lockheed), MLA/Modern Language Association Bibliography (Lockheed), Philosopher's Index (Lockheed), Historical Abstracts (Lockheed), America: History and Life (Lockheed), and RILM/Repertoire International de Littérature Musicale Abstracts (Lockheed), offer behavioral perspectives on literature, history, folklore, and music. The business files, ABI/Inform (Lockheed, BRS, SDC) and Management Contents (Lockheed, BRS, SDC), provide coverage of organizational behavior, occupational stress, decision-making, and vocational testing. The technical files, particularly Agricola (Lockheed, BRS, SDC) and Compendex (Lockheed, BRS, SDC), also offer many behavioral perspectives. Angier and Epstein offer useful guidelines for finding mental health information in these seemingly unlikely data bases.<sup>24</sup>

This lengthy description of data bases relevant to mental health has doubtless left the reader in a state of quandary. If information can be found in so many locations, where should the search begin? Even more important, when can the search end with a reasonable expectation that the most pertinent citations have been retrieved? And what of the inevitable overlap among all these data bases?

The latter question has been addressed by numerous authors. Gardner and Goodyear compared coverage of the interdisciplinary topics of abortion and death in four printed indexes: *Index Medicus*, *International Nursing Index*, *Sociological Abstracts*, and *Psychological Abstracts*.<sup>25</sup> They found almost no disciplinary overlap among the four indexes, and concluded that "interdisciplinary coverage cannot be presumed by the use of one or two or even more of the indexes to the published literature."<sup>26</sup> It must be observed, however, that this exercise was not accomplished with online searching; thus, the authors were restricted only to the printed subject indexes. It is possible that the results might have been different had they been able to retrieve additional citations discussing death or abortion in their abstracts or even titles, even though the articles might not have been indexed according to those terms.

Smalley conducted a similar comparison of *Psychological Abstracts* and *Index Medicus* for coverage of the journal literature in the area of operant conditioning.<sup>27</sup> In this study, it was shown that "considerable overlap is found...by the two indexing tools, but use of both is necessary to assure a comprehensive search."<sup>28</sup>

Caldwell and Ellingson compared the overlap between ERIC and PsycINFO in four sample searches, and found "the percentage of citations that were duplicated in the...searches was less than might be expected based on the percentage of overlap in journal coverage between the two data bases."<sup>29</sup> Interestingly, when journal titles from the citations in each search were compared with the list of journals indexed by both ERIC and PsycINFO, more than twice the number of citations that were actually duplicated could possibly have appeared as duplicates. The authors speculate that their results may be limited, and that "more comprehensive search strategies would lessen the difference between the actual citation duplication and potential duplication based upon overlapping journal coverage."<sup>30</sup> This example illustrates the importance of shaping each search strategy to the idiosyncrasies of the data base.

Angier examined the journal overlap of MEDLINE and PsycINFO with NCMHI. She determined that 40 percent of the journal titles indexed by NCMHI were found in MEDLINE and 52 percent of the titles indexed by NCMHI were found in PsycINFO. Approximately 24.5 percent of the journal literature in NCMHI was indexed in all three files, and 66.4 percent of the titles were covered collectively by MEDLINE and PsycINFO. However, 33.6 percent of the NCMHI journal titles were unique. But she cautions that the figures can be misleading. The inclusion and indexing policies for NCMHI, MEDLINE and PsycINFO differ significantly and are important in determining the strength and quality of each file.<sup>31</sup>

Both Brand and Wanger have analyzed the factors involved in data base selection. Wanger stresses an understanding of data base characteristics, namely: (1) subject/content, topic coverage; (2) source document coverage; (3) time period coverage and typical lag times; and (4) searchable and printable data elements.<sup>32</sup> Brand addresses the behavioral sciences directly and lists five steps for search analysis: (1) determine the interdisciplinary nature of the user's question; (2) determine the comprehensiveness of the user's needs (i.e., will the material be used for research, clinical investigation or treatment, or a student dissertation?); (3) determine the type of material relevant to the user's request (are dissertations, foreign-language materials, etc., acceptable?); (4) determine the currency of the literature relevant to the user's request; and (5) determine the efficiency of the search in terms of time and cost.<sup>33</sup>

In addition, it is essential that the search analyst be an active participant in the reference interview by educating the user about the unexpected avenues for acquiring information.

There are few training programs for online searchers in mental health. All of the large vendors—Lockheed, SDC, BRS, and NLM—provide instruction in the use of their systems, but nothing specifically in mental health. Lockheed offers half-day subject seminars on topics such as biology, medicine, business, and the social sciences, which include many of the data bases discussed in this paper. But it is necessary to combine two or more of these to cover the entire range of mental health information. Some of the data base vendors, such as the Institute for Scientific Information, also provide seminars to maximize user efficiency on their data bases. The American Psychological Association, producer of PsycINFO, offers a program closely geared to the needs of behavioral sciences researchers. Library schools and online user groups also sponsor seminars and continuing education courses of interest to the searcher.

The Medical Library Association offers a one-day continuing education course titled *CE-64: Online Searching in Psychiatry*.<sup>34</sup> This course was developed under the auspices of the Standing Committee for Online Retrieval Education (SCORE), an advisory committee to the National Library of Medicine. It emphasizes both understanding of psychiatric terminology and comparative knowledge of the major mental health data bases. The course includes an "in-depth examination of the psychiatric terminology in the third *Diagnostic and Statistical Manual* (DSM III) of the American Psychiatric Association, and of the relationship between DSM III and *Medical Subject Headings (MeSH)*." At the conclusion of the day, "it is hoped that the participants will...become more effective mediators between the end users and the data base systems."<sup>35</sup>

The availability of online searching is continually expanding. It should be relatively easy for most institutions to acquire a terminal or to share one with another department. Lockheed, SDC and NLM all offer "pay-as-you-go" password accounts, with group and minimum-guaranteed-usage discounts. BRS charges are based on an annual subscription, payable in advance, with decreasing rates for greater usage.

Libraries which do not offer online searching can refer patrons to larger medical, academic or public libraries. In addition, some data base producers, such as the Lithium Information Center and the American Psychological Association, will also search their files for a fee. Finally, several government agencies offer free searches of their own data bases.

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The most pertinent of these is the National Clearinghouse for Mental Health Information (5600 Fishers Lane, Room 11A-33, Rockville, Md. 20857; 202/443-4517). As mentioned earlier, funding is uncertain after October 1, 1981. The National Clearinghouse for Alcohol Information (P.O. Box 2345, Rockville, Md. 20852; 301/468-2000) will also perform free of charge literature searches of their data base, consisting of popular and professional literature on alcohol use and alcoholism.

Thus, computerized access to mental health information can be achieved either directly or through a variety of intermediaries. Online searches satisfy many levels of requests, from simple biographies to multifaceted clinical problems. Certainly, this new technology cannot replace the entire reference process, but it does change it by eliminating much of the drudgery, promoting efficiency and expanding the retrievable resources far beyond the physical limits of the library.

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