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DISEASE PREVENTION AND HEALTH PROMOTION

LITERACY AND HEALTH IN THE UNITED STATES:

SELECTED ANNOTATIONS

March 1991

U.S. Department of Health and Human Services
Public Health Service
Centers for Disease Control
Center for Chronic Disease Prevention and Health Promotion
Atlanta, GA 30333

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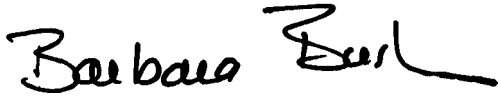
PREFACE

We Americans are healthier today than ever. Our understanding of the causes of illness and death has grown tremendously, and with it our ability to prevent and treat illness and injury. But millions of Americans with poor literacy skills are unable to** take full **advantage of these improvements in health care.

That is why I am pleased to recognize the Centers for Disease Control for the work they have done in assembling Literacy and Health in the United States, a much-needed tool** for **finding and assessing literacy** information **and education resources. This is more than a simple compilation or bibliographyit is a special** effort **to encourage people and groups to pool their strengths for literacy.

I believe that all sectors of our society must join forces to confront problems associated with poor literacy. This holds especially true when it comes to public health at every level. Together we can reach the millions of Americans who struggle daily with issues of well-being that too many of us take for** granted— **like reading a prescription, or a thermometer, or the instructions on a bottle of medicine.

Literacy and Health in the United States provides descriptions of existing programs and materials. This document is an important service, not just to public health practitioners throughout the nation, but to the many people they seek to help.



Barbara Bush

INTRODUCTION

What does this publication contain?

"Literacy in the United States: An Annotated Bibliography" contains abstracts of literature items, materials, and programs selected to represent the methods presently being used by health professionals to reach low-literate populations. The items were obtained by searching relevant computerized databases and by contacting organizations and indiviiuals active in the field of literacy and health. The bibliography will assist health professionals in meeting the needs of this special population by sharing existing resources. Undoubtedly, there are excellent literature items, materials, and programs not included in this bibliography that did not come to our attention through these channels. However, this bibliography does include items indicative of the types of activities taking place to address literacy and health issues. Current items in this publication are also listed in the Combined Health Information Database (CHID).

What is CHID?

CHID is a computerized bibliographic database of health information and health promotion resources developed and managed by the U.S. Public Health Service. This unique reference service is for all health professionals who need to locate health information for themselves or for their clients. Current CHID producers are from the Centers for Disease Control (CDC), the National Institutes of Health, the Office of Disease Prevention and Health Promotion, and the Department of Veterans Affairs.

How can I access the database?

CHID is available for online searching through MAXWELL ONLINE, BRS Information Technologies Division, 1200 Route 7, Latham, New York 12110, (800) 289-4277) and can be accessed using a telecommunicating computer terminal or through libraries and information centers that subscribe to BRS.

Where can I get more information on the database and CHID?

Should you need more information on CHID, wish to submit materials or information for possible inclusion in the database, or need more copies of this publication, contact the CDC at the following address:

Centers for Disease Control
Center for Chronic Disease Prevention & Health Promotion
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Atlanta, Georgia 30333

LITERACY AND HEALTH IN THE UNITEDSTATES:SELECTEDANNOTATIONS

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THE NATIONAL OUTLOOK

Literacy Issues in the United States

01
Adult Illiteracy in the United States: A Report to the Ford Foundation.
Hunter, C.S. Harman, D., ed.
New York, NY, McGraw-Hill Book Company, 206 p., 1979.
Available from: McGraw-Hill Book Company, 1221 Avenue of the Americas. New York, NY 10020.

Due to a weak connection between basic learning research and its actual application in schools, postsecondary institutions, and other educational settings, the Ford Foundation embarked on a program to advance understanding and use of the processes and findings of learning research. World Education, a nonprofit organization that provides training in the technical skills needed to develop and carry out programs in nonformal education, conducted a series of experiments in adult basic education in eight States. Results from the experiments indicated that (1) adults who enroll in American literacy programs are largely self-selected and not representative of the nation's functionally illiterate populations, and (2) it is difficult to assess and address the problems of adult illiteracy in a nation where schooling is both available and compulsory and where the magnitude of the problem is not widely appreciated. Because of these results, the Ford Foundation commissioned a study to examine data in three different areas: (1) The changing concepts of literacy and illiteracy and the interaction between the demands placed on persons in an increasingly complex society and their aspirations in that society, (2) the groups within United States society for whom present educational arrangements have been least effective, and (3) the programs and services offered to adults who seek to remedy deficiencies in their earlier educations. The principal conclusion in Adult Illiteracy in the United States: A Report to the Ford Foundation is that a major shii in national educational policy is needed to serve the educational needs of disadvantaged adults. Overall, the report recommends that new, pluralistic, community-based initiatives be established whose specific objective is to serve the most disadvantaged hardcore poor, the bulk of whom never enrdl in any existing programs.

02
Adult Literacy/Illiteracy in the United States: A Handbook for Reference and Research.
Costa, M.
Santa Barbara, CA, ABC-Clio, Inc., 1998.
Available from: ABC-Clio, Inc., Riviera Campus, 2040 Alameda Padre Serra, Santa Barbara, CA 93103.

Adult Literacy/Illiteracy in the United States: A Handbook for Reference and Research is a compilation of information and resources. The handbook includes a chrondogy of events, legislation and influences related to literacy; biographical sketches of indiviiuals involved in promoting adult literacy; an update on adult literacy, including a summary of the United States Department of Education analysis of the Language Proficiency Survey data, compiled by the Census Bureau in 1982; adult education legislation; a directory of relevant organizations, associations, and government agencies; and a listing of reference materials.

03
CRS Issue Brief: Adult Literacy Issues, Programs, and Options.
Irwin, P.M.
Washington, DC, Library of Congress, Congressional Research Service, 15 p., March 12, 1990.
Available from: Library of Congress, Congressional Research Service, Madison Building, 1 Independence Avenue, Washington, DC 20540. (202) 70745700.

Illiteracy and incompetency in the nation's workforce imply losses through low productivii, accidents, employee errors, and extra training programs. Federal assistance for adult education and literacy programs is primarily authorized through the Adult Education Act. The two general types of literacy definitions are (1) conventional, invdving simple reading and writing skills, and (2) functional, where a more complex set of skills and proficiencies is used as the standard. Definitions of functional literacy depend on the specific tasks, skills, or objectives thought necessary for the comprehension of a literate person. The Adult Liieracy Initiative, launched in 1983, attracts national attention for the promotion of

adult literacy and enhances existing literacy programs, while utilizing the **United** States Department of Education's expertise in coordinating literacy programs nationwide. A multitude of private groups, including churches, businesses, labor unions, civic and ethnic groups, community and neighborhood associations, museums and galleries, and PTA groups, conduct literacy programs. Suggested measures to combat illiteracy include increased funding for these programs; targeting specific populations; an increase in the Federal initiative; leadership from States, localities, and the private sector; and a national commission to define illiteracy and provide expert direction toward increasing the quality of literacy data. Existing Federal programs that provide adult education and literacy services might be continued without amendment. 19 references.

04
Equilibrium of Literacy.
Guthrie, J.T.
Journal of Reading. 26(7):668-670, April 1963.

Literacy is primarily a social exchange, from one person to another, of an idea or bit of information. The literacy requirement exists as a contract between people, such as in the case of an employer and an employee. Arrangements also occur between a reader and the community in which he or she resides. The level of reading required of people depends on the expectations of those around them in the process of communicating. Realistic education programs cannot be developed without first understanding that literacy is a state of equilibrium between personal proficiency and environmental literacy demand; i.e., a person of low literacy skills can appear quite literate if the environmental literacy demand in which the person is expected to operate is lower still and vice versa. Consequently, both the competencies of the indiviiual and the complexities of the demands they encounter must be jointly considered to define more **clearly** a person's level of literacy, and subsequently, the design of any education program in which the person would be participating. A graph summarizes the concept of the equilibrium of literacy; i.e., a person's personal literacy level as compared to the environmental literacy demand and the level of reading proficiency that is viewed as suitable for all indiviiuals. 1 figure.

05
Functional Illiteracy: Keeping up In America.
Harmon, D.
Current. (285):4-9, September 1986.

Functional Illiteracy: Keeping up in America chronicles literacy standards and the problems of illiteracy in America, showing the various patterns of development and the issues that were of importance as the United States matured. At present, functional illiteracy tends to be passed from generation to generation; high school dropouts represent a large segment of the nation's functional illiterates; as much as 15 percent of the adult population today may be functionally illiterate; and, approximately one million children between the ages of 12 and 17 now read below a fourth-grade level. Teachers complain about students' apparent lack of motivation, their negative attitudes toward learning, and their failure to recognize the long-term value of literacy. Even though the Federal Government has continually advocated the elimination of adult functional illiteracy, few funds have be allocated to the effort. If local literacy programs are to work, Federal funding is necessary. The temptation to leave school to go to work, television's demand for Americans' attention over the printed word, and the increasing influx of poorly educated immigrants suggest that functional illiteracy in America can be curbed but not eradicated.

06
Illiteracy: **A National Dilemma.**
Harman, D.
New York, NY, Cambridge Book Company, 113 p., 1967.
Available from: Cambridge Book Company, 888 7th Avenue, New York, NY 10106.

Illiteracy: A National Dilemma presents a strategy of carefully planned, long-term, and sustained instructional effort focused on groups of people within their communities of affiliation and based on constant analysis of their circumstances, needs, and motivations. The adult education effort would consist of a changing curriculum that would become a permanent part of people's lives, available as an aid to the continued growth and development made necessary by changing conditions and definitions of literacy. Chapter topics include (1) what is literacy, (2) literacy in history, (3) a question of values

regarding literacy and illiteracy in the United States today, (4) blaming the schools for the contexts of literacy and reading, (5) literacy and learning, (6) lesson from literacy programs, and (7) why be literate.

07
Literacy: Trends and Explanations.
Chall, J.S.
American Education. 20(9):16-22, November 1964.

The problem of adult literacy, although extremely important, remains clouded due to conflicting research data and conclusions. To collect more current and comparable data, researchers analyzed National Assessment of Educational Progress (NAEP) records to evaluate literacy rates among current and recently graduated students. By studying NAEP literacy trends over the years 1971-l 986, the researchers found different trends at three different grade levels (grade 4, grade 8, and grade 12); students in grade 4 showed the most pronounced literacy increases during the decade, while the students in grade 12 showed declining levels of literacy. The study attributes the difference to the fact that the teaching changes developed through research have been primarily focused on younger children rather than dder ones. In fact, few changes have been implemented at the higher grade levels. The decline in reading ability at the higher levels has prompted concern that either the earlier teaching techniques are inadequate, or that the strong methods of teaching reading at the earlier years do not show a corresponding effort in the latter school years. A close historical examination of the development of reading through various learning stages, in relation to given learning conditions, may provide a better insight into solutions that might work over time. 1 table, 22 references.

08
Toward a Literate Society: The Report of the Committee on Reading of the National Academy of Education.
Carrdl, J.B. Chall, J.S., eds.
New York, NY, McGraw-Hill Book Company, 277 p., 1975.
Available from: McGraw-Hill Book Company, 1221 Avenue of the Americas, New York, NY 10020.

In the report Toward a Literate Society, the Committee on Reading of the National Academy of Education states that the reading problem in the Unlted States is not one of teaching indlvlduals to read at the level of minimal literacy, but rather one of ensuring that every person reaching adulthood Is able to read and understand printed materials that they are likely to encounter in daily life. The committee daii that the most persuasive argument for literacy is that an individual cannot fully participate In modem society unless he or she can read. The ultimate justification of a right-to-read effort is based on Article 26 of the United Nations Declaration of Human Bights, which states that everyone has the right to an education. If literacy is one of the primary objectives of education, then literacy is a fundamental human right The report suggests that the nation's reading problem is the result of (1) teaching methods, procedures, and materials; factors in the learner; (2) special problems of the child who speaks a language other than English; (3) the organization of reading programs; (4) failures in funding; and (5) illiteracy in adults. A strategy for attacking the reading problem consists of (1) research and development; (2) schools observing, evaluating, and modifying teacher performance; (3) teacher training; and (4) possibilities outside of schools. Chapter topics cover a definition and assessment of reading literacy; adult illiteracy in the United States; literacy programs In industry, the armed forces, and penal institutions; and motivational aspects of the literacy problem. Appendixes include a discussion on the preparation and avallabilii of personnel for the teaching of reading and its improvement.

09
Update on Adult Illiteracy.
US Department of Education.
Washington, DC, US Department of Education, 8 p., Revised April 1986.
Available from: US Department of Education, Washington, DC 26262.

The United States Department of Education commissioned the Bureau of Census to conduct the English Language Proficiency Survey in 1982. Update on Adult Illiteracy reports the findings from the survey. The Bureau administered a simple written test of English comprehension to a national sample of 3.400 adults, aged 26 and over. Using the Measure of Adult English Proficiency, the test consisted of 26 questions

that evaluated the indlviiual's ability to identify key words and phrases and match these with one of four fixed-choice alternatives. Six factors found to be strongly correlated with performance were (1) age, (2) immigration status, (3) race, (4) poverty status, (5) amount of schooling, and (6) reported English speaking ability. The six factors were represented in a multiple regression equation by 12 specific parameters. The study found that between 17 and 21 million adults in the United States are illiterate, for an overall rate of nearly 13 percent. Illiterate adults are much more likely to be located in major cities, and most are under the age of 50. Immigration and reliance on a non-English language are also major factors to illiteracy. The report includes illiteracy rate estimates by State, a table of coefficients, and percentage contribution of six predictive factors to estimated illiteracy rates.

Legislation

10
Adult Education Act of 1996.
United States Government.
Washington, DC, United States Government, P.L. 89-750, 1966.

The Adult Education Act of 1966 encourages and expands basic education programs for adults to enable them to overcome English language limitations. The act aims to improve adults' basic education in preparation for occupational training and more profiible employment, helping them to become more productive and responsible citizens.

11
Education Ammendments of 1984.
United States Government.
Washington, DC, United States Government, P.L. 98-511, 1984.

The Education Amendments of 1964, reauthorizes the Adult Education Act. The extension of the Adult Education Act mandates the teaching of basic literacy skills to the most educationally disadvantaged adults, The Secretary of Education's Annual Evaluation Report for Fiscal Year 1963 notes several positive outcomes: (1) Almost 80 percent of the participants in these programs indicated that they had achieved their indiviiual program goals; (2) the provision of support services, flexible scheduling, convenient locations for classes, and more appropriate instructional materials and methodology have made it possible to better serve adults; and (3) those benefiiing from the program included priority groups such as adults with limited English proficiency, unemployed immigrants, and adults in rural areas. The amendment also reauthorizes 10 other education programs: The Bilingual Education Act, the Impact Aid Program, the Women's Educational Enquiry Act, the Indian Education programs, the Asbestos School Hazard Detection and Control Act, the Emergency Immigrant Education Program, the National Assessment of Educational Progress, the National Center for Educational Statistics, General Assistance for the Virgin Islands, and the Territorial Teacher Training Program.

12
National Literacy Act of 1991.
Sawyer, T.
Washington, DC, One Hundred Second Congress, First Session, Bill H.R. 751, 66 p., January 30, 1991.

The National Literacy Act of 1991 seeks to enhance the literacy and basic skills of adults, ensure that all adults in the United States acquire the basic skills necessary to function effectively and achieve the greatest possible opportunity in their work and in their lives, and strengthen and coordinate adult literacy programs. The bill establishes an interagency task force on literacy, a national research institute for literacy, State literacy resource center grants, and a national workforce literacy assistance collaborative in the U.S. Department of Labor.

13
National Literacy Day: Proclamation.
United States Government.
Washington, DC, United States Government, P.L 101-327, July 6, 1990.

To date, the United States Congress has declared a National Literacy Day and issued a proclamation each year since 1966. The 1990 Pmdamatii reads as follows: Whereas literacy is a necessary tool for survival in our society; whereas thirty-five million Americans today read at a level which is less than necessary for full survival needs; whereas there are twenty-seven million adults in the United States who cannot read, whose resources are left untapped, and who are unable to offer their full contribution to society; whereas illiteracy is growing rapidly, as two million two-hundred thousand legal and. illegal immigrants, one million high school dropouts, and one hundred thousand refugees, are added to the pool of illiterates annually; whereas the annual cost of illiteracy to the United States in terms of welfare expenditures, crime, prison expenses, lost revenues; and industrial and military accidents has been estimated at $225,000,000,000; whereas the competitiveness of the United States is eroded by the presence in the workplace of millions of Americans who are functionally or technddogically illiterate; whereas there is a direct correlation between the number of illiterate adults unable to perform at the

standard necessary for available employment and the money allocated to child welfare and unemployment compensation; whereas the percentage of illiterates in proportion to population size is higher for blacks and Hispanics, resulting in increased economic and social discrimination against these minorities; whereas the prison population represents the single highest concentration of adult #literacy; whereas one million children in the United States between the ages of twelve and seventeen cannot read above a third grade level, 13 per centum of all seventeen-year-olds are functionally illiterate, and 15 per centum of graduates of urban high schools read at less than a sixth grade level; whereas 66 per centum of the juveniles who appear in criminal court are functionally illiterate; whereas the 47 per centum illiteracy rate among black youths is expected to increase; whereas one-half of all heads of households cannot read past the eighth grade level and one-third of all mothers on welfare are functionally illiterate; whereas the cycle of illiteracy continues because the children of illiterate parents are often illiterate themselves because of the lack of support they receive from their home environment; whereas Federal, State, municipal, and private llteracy programs have only been able to reach 5 per centum of the total illiterate population: whereas it is vital to call attention to the problem of illiteracy to understand the severity of the problem and its detrimental effects on our society, and to reach those who are illiterate and unaware of the free services and help available to them; and whereas it is also necessary to recognize and thank the thousands of volunteers who are working to promote literacy and provide support to the millions of illiterates in need of assistance: Now, therefore, be it resolved by the Senate and House of Representatives of the Unites States of America in Congress assembled, that July 2, 1990, is designated as National Literacy Day, and the President is authorized and requested to issue a prodamation calling upon the people of the United States to observe such day with appropriate ceremonies and activities. Approved July 6, 1990.

14
Strengthening Education for American Families Act.
Kennedy, E.
Washington, DC, One Hundred Second Congress, First Session, Bill S. 2, 95 p., January 14, 1991.

The Strengthening Education for American Families Act aims to promote the achievement of national education goals, to establish a National Council on Educational Goats, and to establish an Academic Report Card to measure progress on the goats. The bill establishes a plan of action for the initial steps that the Federal Government must take to assist State and local governments, organizations, and institutions in the joint effort of achieving national education. The bill encompasses the National Academic Report Card Act of 1991 and the National Literacy Act of 1991.

Research

15
Adult Functional Competency: A Summary.
University of Texas Austin, Office of Continuing Education.
Austin, TX, University of Texas Austin, Office of Continuing Education, March 1975.
Available from: University of Texas Austin, Office of Continuing Education, Austin, TX 78712.

Adult Functional Competency: A Summary identifies the competencies that are important to economic and educational success in today's society and recommends devices for assessing these competencies of the adult population of the United States. The Adult Performance Level (APL) project attempted to ascertain why reading is important. Rather than relying upon expert opinion, the researchers identified the basic requirements for adult living by reviewing related literature and research, surveying State and Federal agencies and foundations, conducting conferences on adult needs, and interviewing undereducated and underemployed persons. As a result of these activities, the researchers identified five general knowledge areas that may be considered as the content of adult literacy. The five areas are (1) consumer economics, (2) occupational knowledge, (3) community resources, (4) health, and (5) government and law. Based on a reanalysis of the data used to identify the content of adult literacy, four primary skills that account for the majority of requirements placed on adults were identified regarding communication, computation, problem solving, and interpersonal relations. Based on APL findings, a general theory of adult functional competency was created, which states that functional competency is meaningful only in a specific societal context, does not consist of a single skill or even a set of skills, and is directly related in a mathematical sense to success in adult life. Adult competency is a function of both Indiviiual capabilities and societal requirements. Final APL methoddogy consists of (1) the specification of competencies, (2) the development of performance indicators, (3) a field test and subsequent revision, (4) a national assessment of competency, and (5) a determination of competency levels. Results suggest that there is a discrepancy between what is required of adults and what they achieve.

16
Appraisal of Adult Literacy Programs: Reading Between the Lines.
Diekhoff, G.M.
Journal of Reading. 31(7):624-630, April 1988.

Published evaluations of adult literacy programs have presented an overly optimistic view of the effectiveness of these programs. Various studies have shown that after participants have completed adult literacy programs, most show only a marginal increase in grade-level reading abllity: not enough to be considered meaningful improvement. The average graduate of adult reading programs is still considered functionally illiterate by almost any measurement standard. Program usage and growth data, self reports, pretest/posttest reading score comparison, case study data, and other means are all used to evaluate literacy program effectiveness; however, any evaluation that fails to document actual reading improvements has failed to document program effectiveness. The misimpression that there are few problems surrounding adult literacy stems not so much from research design flaws as from a consistent unwillingness on the part of researchers in the area to criticize efforts in service to a cause as important as adult literacy. Untii there is a greater recognitii that what is being done is seen as ineffective, it is unlikely that there will be efforts to identify and eliminate the barriers to more effective programs. 24 references.

17
Final Report: **The Adult Performance Level Study.**
Cates, J.C. Bayley, L Brownlow, A. Greenfiefd, L **Hickok,** D. **LaBruyer,** D. Nogueira, F. **Nored,** A Nyer, L Shelton, E.
Austin, TX, University of Texas Austin, **August 1977.**
Available from: Adult Performance Level Project, **University of Texas Austin, Austin, TX 78712:**
Funded by: US Office of Education, Department of Health, Education, and Welfareto the Texas Education Agency.

The Adult Performance Level (APL) Study has identified competencies that are important to economic and educational success for adults and has developed devices to assess these competencies.

Functional competencies are often called functional literacy, survival literacy, or occasionally, coping skills. The Final Report: The Adult Performance Level Study includes a discussion of the project's objectives, a theory and methoddogy of adult functional competency, a summary on the functional competency of adults in the United States, and suggestions on how to meet the needs of these adults. The report identifies five general knowledge areas which may be considered as the content of adult literacy: (1) Consumer economics, (2) occupational knowledge, (3) community resources, (4) health, and (5) government and law. The report also identifies four primary skills that account for the majority of requirements placed on adults: Communication, computation, problem solving, and interpersonal relations. The report's appendixes include a description of sample design and field procedures of the APL study, a Bayesian scoring process for APL test items, and project reports for fiscal year **1975-1976.**

18
Literacy: **Profiles of America's Young Adults.**
Kirsch, I.S. Jungeblut, A.
Princeton, NJ, National Assessment of Educational Progress, 66 **p., 1986.**
Available from: Educational Testing Service, Rosedale Road, Princeton, NJ 06541. Report No. 16-PL-02. Funded by: Office of Educational Research and Improvement under Grant no. NIE-G-640013.

The **Literacy:** Profiles of America's Young Adults report presents a 1965 National Assessment of Educational Progress (NAEP) study. The study assessed the literacy skills of a nationally representative household sample of young adults living in the 48 contiguous United States. Researchers contacted some 40,000 households to locate and assess approximately 3,600 persons between **the ages of 21 and 25.** The assessment consisted of 500 interviews with each interview lasting approximately 90 minutes. Approximately 60 of the 90 minutes were devoted to measuring proficiencies on tasks that simulate those encountered in various adult settings, such as (1) reading and interpreting newspaper articles, magazines, and books; (2) identifying and using information located in forms, tables, charts, and indexes; and (3) applying numerical operations to information contained in a menu, a checkbook, or an advertisement. During the remaining 30 minutes, researchers obtained background information on the respondent's current reading and writing activities, occupational status and aspirations, educational and early language experiences, and home characteristics. NAEP characterized the literacy skills in terms of the following literacy scales: Prose literacy, document literacy, and quantitative literacy. Findings indicate that while an overwhelming majority of young adults adequately perform tasks at the lower levels on each of the three scales, sizable numbers appear unable to do well on tasks of moderate complexity. The report includes an overview of the assessment and profiles of the estimated literacy proficiencies of young adults, comparisons of young adults with in-schod 17-year olds regularly assessed by NAEP, characteristics of the young adults, relationships of background characteristics to performance on the proficiency scales, and a description of the oral language results for selected samples of this population.

19
Politics of Adult Literacy Promotion: An International Perspective.
Bhola, H.S.
Journal of Reading. 31(7):667-671, April 1986.

As countries of the Third World have tried to integrate adult literacy policies into their development policies, the political nature of adult literacy development has come to the surface. The motivationaldevelopmental model emphasizes individual motivations as the engine of development. The indiviiual's desire to improve creates the environment necessary for positive change in literacy. The State may make available what is beyond the means of individuals and communities, but is not obliged to lead. The planned development model focuses on the important **rde of institution building** in the development of the society. The model assumes that growth can be accelerated and aims to introduce modes and mechanisms of efficiency. The structuraldevelopmental model is fdlowed by so-called revolutionary societies. The emphasis is on the change of structures and on building brand new institutions, even as people are being motivated to gain ownership of new institutions. Reading teachers need to raise their awareness and

examination of literacy campaigns worldwide to discover at what level literacy efforts are conducted in terms of fulfillment, fairness, and freedom. 2 tables, 14 references.

20

Readers' Responses to Language Experience Approach Materials.
Aderman, B. Nitzke, S. Pingree, S. Voichick, J.
Adult Literacy and Basic Education. 11(1):13-22, 1987.

To communicate more effectively with poverty-level consumers, many of whom are adults with inadequate reading and writing skills, a group of educators developed an experimental pamphlet on nutrition using an adaptation of the language experience approach (LEA). LEA takes the learner's spoken language, **transcribes** it, and then uses **it** as **text** material. Text for the experimental LEA pamphlet consisted of statements from low-income mothers after they had viewed a P-hour nutrition education program. An **exploratory** study compared comprehensibilii and communication effects of the LEA pamphlet to a standard version written by a nutritionist. The study used five reading comprehension measures to assess comprehensibility. Four of the measures (free recall, main Mea statements, content recognition, and oral reading) are accepted procedures used to measure readers' comprehension. The fifth measure examines how well the text served as a conversation between the reader and the author; i.e., the evaluation asks the reader to add her own content after reading from the text. Results indicated that readers were able to comprehend the LEA material at least as well as the standard **version and were more accepting of the message in the LEA pamphlet. Recall of subject content** was higher after reading the LEA pamphlet and, when authorship was omitted, readers rated the LEA pamphlet as more informative. **18** references.

Readability Formulas and Their Use

21
Assessing Readability.
Klare, G.R.
Reading Research Quarterly. 10(1):62-102, 1974-l 975.

To clarify the uses, benefits, and shortcomings of various readability formulas, a review assessed formulas and related devices according to their capacity for predicting readability. The review grouped the formulas and other devices into four categories: (1) Recalculations and revisions of existing formulas; (2) new formulas, for general-purpose. or special-purpose use; (3) application aids, for both manual and machine use; and (4) predicting readability for foreign languages. The review covers 26 formulas in brief: The Aquino formulas, the Bormuth formulas, the Botel formula, the Clear River Test, the Coleman formulas, the Dale-Chall formula, the Damerst Clear Index, the Danielson-Bryan formula, the Devereaux formula, the Easy Listening formula, the Elley formula, the Farr-Jenkins-Paterson formula, the Flesch formulas, the FOG Index, the FORCAST readability formula, the Jacobson formula, the Lensear Write formula, the Lorge formula, the Mugford Readability Chart, the Readability Graph, the Ride scale, the Rogers formula, the Shaw formula, SMOG grading, the Spache formula, and the Syntactic Complexity formula. Guidelines for choosing a particular readability formula include five considerations: (1) special versus general needs, (2) manual versus machine application, (3) simple versus complex formulas, (4) word length versus word list formulas, and (5) sentence length versus sentence complexity. 131 references.

22
Cloze **Instruction Research: A Second Look.**
Jongsma, E.A.
Newark, DE, International Reading Association, 46 p., 1980.
Available from: International Reading Association, 800 Barksdale Road,
Newark, DE 19711.
Funded by: US Department of Education, National Institute of Education under contract no. 400-78-0026.

Thirty-six studies conducted from 1970 to 1980 on the cloze procedure as an instructlonal technique are reviewed. The review of the literature was organized into the following eight sections: (1) Analysts of comparative studies; (2) analysis of instructional goals; (3) analysis of mater&Is; (4) analysis of age, grade level, and reading ability; (5) analysis of teaching procedures; (6) analysis of deletion strategies; (7) analysis of scoring methods; and (8) analysis of student attitudes. Findings from the analysis and review of the'lfterature indicate that the cloze procedure is most effective in developing reading comprehension. There is no evidence that cloze instruction is either more effective for any particular type of material or more effective for one age or grade level. Cloze Instruction is likely to be more effective when discussion is focused on clues which signal responses and on the appropriateness of responses. Cloze materials which are carefully sequenced as to difficulty, length, or purpose are more effective than undifferentiated exercises. The quality of a cloze instruction program is more important than its length. Selective deletion systems aimed at particular contextual relationships are more effective than semi-random deletion systems. Some form of semantically acceptable scoring should probably be encouraged for instructional purposes. A summary of cloze teaching studies is appended. 95 references.

23
Cloze **Procedure: A New Tool for Measuring Readability.**
Taylor, W.L.
Journalism Quarterly. Pages 415433, Fall 1953.

The cloze procedure is a psychological tool developed to measure the effectiveness of communication. Because it was also looked upon as effective in estimating readability, it was used in three pilot studies and two experiments in which doze procedure results were compared with those of two readability formulas, Flesch and Dale-Chall. The doze procedure systematically deletes words from a prose selection and then evaluates the success a reader has in accurately supplying the words deleted. The procedure involves both oral and written communication and does not specify any particular

part for deletion. Using two *written passages* of equal length and deleting only words, it was found that the procedure could discriminate effectively between different levels of readability; i.e., it was sufficiently sensitive to yield statistically contrastable scores. However, some methods seemed to be relatively more efficient quantitatively. Future research is required to substantiate the cloze procedure's applicability, not only to readability measuring, but to other fields involving communication measurement. The most outstanding characteristics of the procedure appear to be its effectiveness, its simplicity, the range of influences it involves, and its apparent possibilities for future use. 5 tables.

24

A Formula for Predicting Readability: Instructions.
Dale, E. Chall, J.S.
Educational Research Bulletin. 27:37-54, February 18, 1948.

The Dale-Chall formula for predicting readability is based on average sentence length and the percentage of unfamiliar words. There are six rules for selecting samples of a text to be analyzed and for computing the average sentence length and percentage of unfamiliar words. As each count is made, it is recorded on a work sheet where detailed steps are given for arriving at the grade level of reading difficulty. The steps in filling out the work sheet are as follows: (1) Select the samples; (2) label the work sheet; (3) count the number of words; (4) count the number of sentences; (5) count the number of unfamiliar words; and (6) complete the work sheet. In counting the number of unfamiliar words, special rules for common and proper nouns, verbs, and other parts of speech are enumerated. The average sentence length is computed by dividing the number of words in the sample by the number of sentences in the sample. The Dale score is computed by dividing the number of words not on the Dale list (a list of 3,006 familiar words that are known in reading by at least 80 percent of the children in fourth grade) by the number of words in the sample, and by multiplying by 100. The formula raw score is obtained by adding together the average sentence length, the Dale score, and the constant. The formula raw score is converted to a corrected grade-level which indicates the grade at which a book or article can be read with understanding.

25

Fry's Readability Graph: Clarifications, Validity, and Extension to Level 17.
Fry, E.
Journal of Reading. 21(3):242-252, December 1977.

Edward Fry, the creator of Fry's Readability Graph, promotes the need to count proper nouns In readability formulas. First, it **is known that proper nouns do contribute to the difficulty of reading material. Objections for counting proper nouns in readability tests have largely come from editors trying to make their publications' readability low enough for** the grade level at which they hope to sell their books. Including proper nouns in readability tests makes it easier to select books with appropriate reading levels for children and contributes to increasing children's comprehension, pleasure, and inclination to keep reading. Readability-formula test accuracy Is verified by a variety of measurements. Most often, the validity of formulas are examined through correlations between formulas or correlations with comprehension scores, cloze scores, oral reading errors, observer judgment, and written passages of known difficulty. Despite the variety of these measures, additional refinements are suggested to determine validity with greater accuracy. Finally, graph extension to college level material has been done through extrapolation, but there is no data currently available about the difference between thirteenth through sixteenth grade material. Determining college norms is difficult because of the diversity in academic qualifications of students, and because college reading tends to be subject specific. 1 table, 2 figures, 39 references.

26

Interpreting Readability Assessments.
Vaughan, J.L.
Journal of Reading. 635639, May 1976.

Much has been assumed and little stated about interpreting readability assessments. The publication of Fry's readability graph In 1968 marked the beginning of a new era in readability because it made readability assessments available to the masses. Research in the area of readability revealed discrepancies between the Fry graph, the Dale-Chall formula, and the SMOG formula. Based on the application of the Fry. Dale-Chall, and SMOG formulas to the same sample passages of 87 different articles,

the results indicate (1) the Dale-Chall and Fry scores consistently agree, (2) the SMOG scores consistently disagree with those obtained by the Dale-Chall formula, (3) the SMOG scores disagree with those obtained from the Fry graph, and (4) the SMOG scores tend to be two grades higher than those of the other two devices. Because the primary method of validating readability assessment devices show high correlations with other techniques or formulas of predicting reading difficulty, Spearman rank correlations among the scores yielded by these three devices were determined. Results show that SMOG scores consistently disagree with both Dale-Chall and Fry scores of grade level prediction, yet the SMOG is highly correlated with both the Dale-Chall formula and the Fry graph. The disagreement between the devices is a result of a variance in what they predict. Each formula accurately predicts a reading difficulty level that it purports to predict. Therefore, a readability score is only an estimate of the difficulty of a reading passage. No discrete score can be considered definitive. A readability score is most properly interpreted when it is taken to be a point within a range of grade levels.

27
introduction to the Cloze Procedure: An Annotated Bibliography.
McKenna, M.C. Robinson, RD., eds.
Newark, DE, International Reading Association, 40 p., 1980.
Available from: International Reading Association, 800 Barksdale Road, Newark, DE 19711.

Introduction to the Cloze Procedure: An Annotated Bibliography provides a reference on the cloze procedure that is useful to both the practitioner and the researcher. The cloze procedure is a method of measuring readability by systematically deleting words from a prose selection and then evaluating the success a reader has in accurately supplying the words deleted. The authors selected the bibliographic material based on the following criteria: (1) Importance of the source as a contribution to cloze research, (2) extent and usefulness of the source's bibliography as a guide to related research, (3) implications for practitioners, (4) suggested possibilities for future research using the cloze procedure, and (5) ease with which the source can be obtained. Bibliographical headings include (1) Reviews, (2) Comprehension and Readability, (3) Statistical and Constructional issues, (4) the Psychofogy of Cloze, (5) Contextual Phenomena, (6) Cloze as a Teaching Device, (7) Foreign Language Applications, and (8) Cloze and Maze.

28
A New 'Readability Yardstick.
Flesch, R.
Journal of Applied Psychology. 32(3):221-233, June 1948.

Flesch's readability formula is based on a count of four language elements: (1) Average sentence length in words, (2) average word length in syllables, (3) average percentage of personal words, and (4) average percentage of personal sentences. The new readability yardstick, a revision of Flesch's original readability formula, employed McCall-Crabbs' Standard Test Lessons in Reading as its criterion, though 13 of the 376 passages that contained poetry or problems In arithmetic in the standard test were omitted in the count of the first two elements to make the prediction more accurate. The 13 passages were retained in the count of the last two elements which are designed to test human interest. Two multiple-correlation regression formulas were computed, one using the first two elements and one using the last two. This gave independent predictions of the reading ease and the human Interest of a given passage. Formula A is essentially a test of the level of abstraction, and Formula B predicts only the effect of the two human Interest elements on comprehension. The real value of Formula B lies in the fact that human interest will also increase the readers attention and his motivation for continued reading. in addition, the two new formulas will be more useful for the teaching of writing, since the added factor and the division into two parts will show specific faults in writing more clearly. 7 tables, 20 references.

29
Readability Formulas **May Mislead You.**
Pichert, J.W. Elam, P.
Patient Education and Counseling. 7(2):181-191, June 1986.

The health care literature has embraced readability formulas as an acceptable means of judging patient

education materials without adequately acknowledging the formulas' practical and theoretical limitations. While readability formulas have legitimate uses, the criteria for their proper use have often been violated. These criierii include the following: (1) readability formulas should be supplemented by other means of judging the quality of patient education materials, (2) the readers for whom the text is intended should be similar to those on whom the readability formula is validated, and (3) the text to be assessed should have been written without readability formulas in mind. It is important to remember that readability formulas were not designed to be used as writing guides. A suggested procedure for ensuring that a text suits its intended readers includes (1) identifying the function or purpose of the text; (2) identifying the reader; (3) scanning the literature for the characteristics that give life to texts designed for the subject and the audience; (4) field-testing the text; and if necessary, (5) rewriting the text and field-testing it again. 33 references. (HE8501 142)

30

Readability, Readability Formulas, and Cloze: Selecting Instructional Materials.
Hiieman, D.R.
Journal of Reading. 22(2): 117-l 22, November 1978.

The literature on the use of reading materials is the scene of constant debate as to whether or not a given set of materials is readable. The confusion seems to result from whether one is attempting to predict or to measure the degree of readability of any text. Standard readability formulas merely rank text by diffiiulty but do not take into consideration what the reader actually faces in reading the material; i.e., the syntactic complexity or sentence density. Because the doze procedure takes into account the interaction between the reader, the material, and the reading situation, it is a better measurement device for readability than a predictor. In clozentropy, an offshoot of the cloze procedure, reader responses to a set of materials are compared to responses of a criterion group rather than to the material itself. Because thii method makes it easier to match messages received from materials to a particular audience, dozentropy is ideally suited for intercultural communicators. When using the cloze procedure, however, the following should be taken into account: (1) Standards of what is readable and understandable should be relative to a particular instructional situation; and (2) classifying reading materials by arbitrary or artificial means and Ignoring what the reader. brings to the effort diminates the most important part of material evaluation. 23 references.

31

SMOG Grading: A New Readability Formula.
McLaughlin, G.H.
Journal of Reading. 12(8):639-646, May 1989.

The two main claims of the SMOG Index are that counting polysyllabic words in a fiied number of sentences gives an accurate index of the relative difficulty of various texts, and that the formula for converting polysyllable counts into grades gives acceptable results. Both claims were tested. A comparison of 84 subjects' mean reading efficiency scores with polysyllable counts of eight passages showed a perfect negative rank correlation between polysyllable counts and measures of reading efficiency, apparently vindicating the SMOG counting method. Comparison studies show that SMOG Grades, which indicate what grade text can be read with complete comprehension, are generally higher than those for other readability formulas, which purport to indicate the grade at which text can be read with understanding--a less severe criterion.

32

Why Readability Formulas Fail.
Bruce, B. Rubin, A. Starr, K.
IEEE Transactions on Professional Communication. PC-24:50-52, 1981.

Readability formulas have been used in a variety of situations to estimate the complexity of the text. The most obvious and explicit use of readability formulas is by educational publishers designing basal and remedial reading texts. Increasingly, public documents such as insurance policies, tax forms, contracts, and jury instructions must meet criteria stated in terms of readability formulas. Yet readability formulas fail as a simple measure of text readability because they ignore or vidate much of the current knowledge about reading and the reading process, they lack a statistical basis. and they are inappropriately used. Readability formulas should be used only if the fdlowing criteria are met: (1) The

material may be freely read;, (2) the text is honestly written; (3) higher-level structures are irrelevant; (4) the purpose in reading is irrelevant; (5) statistical averages are meaningful in individual cases; and (6) the readers of interest are the same as the readers on whom the readability formula was validated. The real 'factors that affect readability are elements such as the background knowledge of the reader relative to the knowledge presumed by the writer, the purpose of the reader relative to the purpose of the writer, and the purpose of the person who is presenting the text to the reader. These factors cannot be captured in a simple formula. 12 references.

33

Writeabilii: The Principles of Writing for increased Comprehension.
Fry, E.B.
IN: Readability: its Past, Present, and Future. Zakaluk, B.L. Samuels, S.J., eds. Newark, DE, International Reading Association, pages 77-95, 1988.
Available from: international Reading Association, Newark, DE 19714.

W&ability is concerned with writing, rewriting, or editing a wide variety of reading matter, including textbooks and consumer contracts, to get those materials to the desired readability levels. Writeability helps writers and editors produce materials that can be comprehended more easily without chopping sentences in half and selecting any short word to replace a long word. The basic idea behind readabilii is to help writers, editors, teachers, and iibrarfans to match the difficulty of written material with the reading ability of the student. Techniques for lowering readability formula scores include using simpler vocabulary; using short sentences and paragraphs; selecting the proper organization; keeping paragraphs cohesive by being about a single thought; using personal words; improving imageability by adding appropriate pictures, diagrams, maps, and graphs; and avoiding the improper use of referents by repeating the noun. Reader motivation and subject matter cannot be judged by readability formulas. Writers should find interesting topics and know their audience. Appendiies include a writeability checklist and a graph for estimating readability. 20 references.

HEALTH AND LITERACY

Health and Literacy Issues

34
Compliance, Low Literacy, and Locus of Control.
Hussey, L.C. Gilliland, K.
Nursing Clinics of North America. 24(3):605-611, September 1989.

Compliance, defined as the extent to which a person's behavior coincides with medical health advice, remains a critical, complex issue in health care today. Many interrelated factors affect levels of compliance and noncompliance. Seven factors have been found to affect compliance positively: (1) Patient compliance with other aspects of the regimen, (2) whether the patient is receiving other treatments for the same condition, (3) family influence, (4) family stability, (5) the patient's perception of his own susceptibility to the disease, (6) the patient's perception of the disease as serious, and (7) the efficacy of therapy. Three factors found to have a negative effect on compliance involve the duration of therapy, the number of concurrent drugs or treatments, and side effects. The failure to adhere to medical treatment, whether intentionally or unintentionally, is called noncompliance. Low literacy and illiteracy are major contributing factors to noncompliance. People with low literacy skills may not realize what information the health care professional needs to know for a history and physical or nursing assessment. In addition, a person who is functionally illiterate may not be able to act on content after reading it. Locus of control, a behavioral concept, concerns how a person perceives his ability to influence or control his life. Research suggests that internally oriented individuals are more likely to be health oriented and desire physical well-being and are more likely to comply with recommended health regimens. By assessing literacy and locus of control, the health care professional can identify persons less likely to comply with medical treatment. 20 references. (HE9000657)

35
Functional Illiteracy in Today's Work Force.
Koen, S.L.
Business and Health. 5(3):18-23, January 1988.

The literacy crisis among members of the baby boom generation (persons born between 1946 and 1964) has important implications for business and industry. More and more employers are reporting that the majority of their employees with high school diplomas have major deficiencies in reading, writing, mathematics, and basic cognitive processing skills. Two major studies, the Adult Performance Level (APL) study of 1975 and the National Assessment of Educational Progress study of 1985, reveal that the literacy capabilities of a high proportion of baby boomers are inadequate for daily living and the demands of the workplace. In the health area, specifically, the APL study assessed 13 objectives for functional competence and found insufficient reading skill levels among 52 percent of the study sample. This finding has important implications for health care decision making, employee health promotion programs, and workplace safety and liability. To improve the health, safety, and productivii of its workforce, American business will have to introduce targeted and effective workplace literacy programs. Two companies, the Polaroid Corporation and Aetna Life and Casualty Company, have developed model programs in workplace literacy development. (HE8700998)

36
Illiteracy Crisis: Implications for the Occupational Health Nurse.
Grueninger, S.
AAOHN Journal. 34(9):429-431, September 1986.

Although an estimated one-third of American adults are classified as functionally illiterate, the nursing literature has failed to address this problem. These indiviiuals represent a population at risk. It is inevitable that millions of functionally illiterate persons are in the workplace. Since most employment qualifications necessitate a ninth-grade level of education, it is likely that many functionally illiterate persons may be identified on the job. The occupational health nurse is in an excellent position to identify these employees and to plan interventions designed to address this problem. From a health

perspective, the occupational health nurse needs to be aware of the special health risks associated with illiteracy. The legal, economic, and social costs of illiteracy in the workplace are high in terms of the equipment, health, and lives that are lost due to needless accidents. Awareness of the functionally illiterate employee is the first step in the intervention process. There are specific strategies available to the occupational health nurse in confronting illiteracy in the workplace: (1) Education, to increases public awareness of the extent of the problem; (2) collaboration, to work with colleagues to identify functionally illiterate individuals; and (3) referral of functionally illiterate individuals to remedial programs. Qualitative research could yield valuable information related to priorities, concerns, and functional abilities of the functionally illiterate employees. 6 references. (HE9000550)

37
Literacy and Health.
Kappel, B.
Ontario Medical Review. 55(3):42-43, March 1988.

Millions of people are unable to receive and understand information related to health because they do not meet the literacy demands of today's society. Far ranging implications and risks include not understanding directions on medications, overdose, improper use, inappropriate use, not understanding labels in grocery stores and drug stores, not having access to thousands of brochures and pamphlets related to health care and healthy living, not understanding health and safety warnings, and not understanding instructions for handling chemicals and machinery. Adults who do not understand information are at risk. A great deal of information, including instructions, booklets and pamphlets, packaging and labeling, warnings, and print media is written in such a way as to be inaccessible to millions of people. Altering the style and content of materials will not solve the problem. Strategies must be developed to ensure that when information is given, the receiver of that Information understands. People who are learning to read do not always learn to read and understand messages that are critical to their health and safety. Strategies must be developed to ensure that literacy programs help learners identify critical messages and learn to understand them. 3 references. (HE9000549)

38
Literacy and Health: Making the Connection.
Pen-in, B.
Health Promotion. 28(1):2-5, Summer 1989.

As part of the Literacy and Health Project, the Ontario Public Health Association conducted a study on the connection between illiteracy and health. The study emphasized three elements: (1) Limited literacy skills as a cause of poorer health; (2) the obtaining of information about health, the appropriateness of existing health and medical services, and the awareness of health and medical workers to health problems associated with illiteracy; and (3) potential solutions to these problems. The researchers acquired information on illiteracy through a comprehensive literature review, a letter of invitation to public health units to share what they knew about health problems associated with literacy, case studies with health and literacy groups, and selected key informant interviews. The study revealed that poor health can be directly linked to limited reading skills. Making the World Healthier and Safer for People Who Can't Read is an action plan that has been designed using the results of the study. 6 references. (HE9000458)

Health Promotion Literature

39
Are Your Patient Education Materials Readable?
Nelson, G.D. Nelson, B.
Health Educator. 3(6):10-l 1, November/December 1986.

Written patient education materials must be carefully selected so that their level of reading difficulty matches the reading ability of the intended audience. Readability testing is the process of identifying the reading difficulty of written materials. Readability is influenced by a variety of factors, including the interest and attractiveness of the text, the complexity of the subject matter, and various grammatical properties of the text such as number of words, word choice, and sentence structure. Readability can be predicted by applying various formulas that count language elements to determine the grade level at which the material is written. By using microcomputers, patient educators can predict readability quickly and easily. Those educators who do not have the resources to test readability with microcomputers can use one of the simpler readability formulas such as the FOG Index to determine the grade level of patient education materials. An eighth-grade reading level is the standard for general circulation magazines and newspapers. This standard can be used to judge roughly the relative reading levels of indiviiual patients. It is important to remember that patients under stress tend to read at a level beneath attained education. 4 references. (HE8600058)

40
Assessing Readability of Patient Information Materials.
Spadaro, D.C. Robinson, LA. Smith, LT.
American Journal of Hospital Pharmacy. 37(2):215-221, February 1988.

Researchers examined four readability tests useful in evaluating the difficulty level of drug information for patients and provided instructions for applying the tests. Assessment of readability is based on either word and sentence length (method 1) or word elimination from a standard list (method 2). The Flesch and FOG formulas (method 1) are suitable for determining readability levels for the fourth grade through college. The Fry readability graph (method 1) allows a quick estimation of readability levels for the first grade through cdlege. The Spache system (method 2), used for children's materials, determines readability levels for the first through third grades. Using the Flesch formula, researchers assessed the readability levels of 111 patient-oriented brochures and pamphlets. Only 50 percent were written at or below the accepted standard of eighth grade level. 13 references. (HE8001683)

41
Assessing Readability of Patient Information Materials.
Spadero, D.C.
Pediatric Nursing. 9(4):274-278, July/August 1983.

A large gap exists between a patient's ability to read and comprehend written materials and the level at which patient information materials are written. Health care practitioners must be knowledgeable about readability formulas, and they must apply these formulas in evaluating and preparing written materials for patients. The SMOG formula is the fastest and easiest to use and is recommended for assessing materials for grade four to adult, while the Spache method is probably best for grades one to three. Readability formulas are designed to make quick and easy assessments of readability, but they do not take into account all variables that can influence the difficulty of a selection, and they are not perfectly valid. A survey of the readability levels of 66 patient information pamphlets indicated that only 25 percent of them were written at or below the ninth-grade level. 15 references. (HE8600698)

42
Assessing the Readabllii of Health Education Messages.
Freimuth, V.S.
Public Health Reports. 84(6):568-570, November/December 1979.

Researchers used the SMOG Grading Formula, whiih assesses the reading difficulty of a passage by counting the polysyllabic words in 38 sentences, to study the readability of health-related articles in Reader's Digest, Ebony, Ladies Home Journal, Time, Newsweek, the Washington Post, and Family Weekiy.

They compared the publications to numerous pamphlets for patient education prepared by the National Cancer Institute and the Fox Chase Cancer Center of Philadelphia. The SMOG reading grade for the lay publications ranged from requiring 1 year of high school to neatly a college degree to understand the message. The variation in reading grade was less for the pamphlets; however, patients who have less than 2 years of high school could have comprehension difficulties. Because of anticipated difficulty in communicating health information, educators should routinely assess the readability of their articles. 2 references. (HE8001673)

43

Asthma Information: Can it be Understood?

Bauman, A.E. Smith, N.A. Braithwaite, C. Free, A. Saunders, A.

Health Education Research. 4(3):377-382, September 1989.

A study assessed asthma education materials disseminated through a major Australian newspaper, Asthma organizations, and education programs for readability and comprehensibility of information about seif management skills and the nature of the disease. The study compared newspaper articles with patient information pamphlets, handbooks, and health professional materials according to the FOG and SMOG indexes which use sentence length and word difficulty to estimate the school grade levels at which the materials could be understood. Researchers analyzed the summarized data using the Wilcoxon signed rank sum. Results indicate that most asthma education material is written at a reading age well above that of the general community. Only two pieces had similar FOG reading age scores to a typical Sydney newspaper, whereas all the other material was at least two reading grades higher. Nonparametric analysis suggested that these differences were all significant at the P c 0.1 level. Information for the professional needs to be distinguished from information for the patients and the community in the materials disseminated to these different target audiences. This study advocates pretesting and evaluation of asthma information as well as other written health education materials prior to distribution among patients and the wider community. (HE9000081)

44

Card&c Patient Education Literature: Can Patients Read What We Give Them?

Boyd, M.D. Ciiro, K.

Journal of Cardiac Rehabilitation. 3(7):513-516, July 1983.

Because written communication is a major source of information for cardiac patients, researchers conducted a study to determine the reading levels of cardiac patient education literature. The study used the SMOG Grading Formula to assess the reading levels of 50 samples of cardiovascular literature. The SMOG formula predicts, through regression analysis, the mean grade-attainment necessary for a patient to be able to read and comprehend the information and uses two language elements as predictors of reading difficulty: Sentence length and the number of syllables in each word. Of the 50 samples chosen it was found that 6 samples (12 percent) were written on the cdlege level, 20 samples (40 percent) were written on the eleventh and twelfth grade reading levels, 19 samples (38 percent) were written on the ninth to tenth grade reading levels, and 5 samples (10 percent) were written on the seventh and eighth grade reading levels. Studies have shown that the adult population in the United States has mean reading levels at or below the eighth grade level; therefore, most of the literature that was assessed would be inappropriate for reader understanding. It is recommended that patient education literature be redesigned to reflect the population's mean reading level. 1 figure, 2 tables, 13 references. (HE9000417)

45

Cloze Procedure.

Holcomb, C.A. Ellis, J.K.

Health Education. 9(6):8-10, November/December 1978.

A study employed the cloze procedure, a comprehension-measuring device, to determine the readability of selected patient education materials. Subjects consisted of 84 elderly adults who eat a noon meal at the 13 program sites operated by the Oregon District Four Elderly Nutrition Program. The instruments used in the investigation were three separate cloze test forms, each of which used printed information on hypertension. The study used the Dale-Chall readability formula to revise the readability

level to conform to a sixth grade reading level and the Coleman readability formula to predict the cloze score for the printed material. Results indicated that the subjects scored significantly lower than had been predicted by the Coleman formula. The study verified the observation by other researchers that the cloze procedure is more effective than the Coleman and Dale-Chall procedures in contrasting the relative difficulty of the content of different samples of printed material. The cloze procedure can assess the patient's recognition of words and sentence structure. Findings from the study generated implications for health educators in the formulation of educational prescriptions for their patients. 10 references. **(HE8100932)**

46

Cloze Procedure and Readability of Patient-Oriented Drug Information.

Hdcomb, C.A.

Journal of Drug Education. **13(4):347-357,** 1883.

Using the cloze procedure, researchers investigated the readability of a patient package insert **(PPI)** and examined the effects of age and schooling on cloze test scores. The cloze procedure is a measure of the readability level of printed materials in terms of readers' ability to comprehend what they have read. The researchers developed a SO-item cloze test directly from a PPI accompanying an oral contraceptive. Seventy-five women visiting family planning clinics in two cities completed the test. Each woman noted her age and the number of years of schooling she had completed. Forty percent of the women tested at the frustrational level of reading comprehension, 33 percent tested at the instructional level, and only **27** percent tested at the independent level. Results reveal that three out of four patients will need assistance in comprehending information in the PPI. Age and schooling, independently and combined, had a significant positive effect on the cloze test scores. The cloze procedure is an accurate and reliable measure of reading comprehension for short printed information and requires little expertise in test administration. The procedure can be very useful in developing printed instructional materials for patients at varying levels of reading skill. 14 references. **(HE8400646)**

47

Communicating Nutrition Information to Low-literate Individuals: An Assessment of Methods. Revised Final Report.

Mettger, W.

Chicago, IL, American **Public** Health **Association,** One Hundred Seventeenth Annual Meeting, 22 **p.,** October 22-26, 1868.

Available from: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute, Office of Cancer Communications, Bethesda, MD 20882.

Funded by: National Cancer Institute, Office of Cancer Communication.

The objectives of the Working With Low-literate Populations study, designed to gather information on the experiences of public health nutritionists working with low-literate clients, were (1) to assess the effectiveness of visual, written, and auditory tools for communicating nutrition information to **low-literate** individuals, and (2) to Mentify successful and unsuccessful methods used by public health nutritionists to communicate nutrition information. **The study operationally defined low literacy as possession of less than a high school education to allow researchers to select States for participation in the study that have** high **percentages of adults with less than a high school education. The eight States selected were Alabama, Arkansas, Kentucky, Maine, Maryland, Mississippi, North Carolina, and South** Carolina. Researchers asked directors of public health nutrition **in these States to submit** the names **and addresses of all public** health nutritionists **in their State.** The researchers then sent questionnaires to 400 public health nutritionists with a response rate of 50 percent (n = 202). Questionnaire instructions requested that respondents. use their organization's definition of low literacy when determining the percentage of low-literate clients that they saw. Findings indicated that the most effective means of communication were food models, television, and videos. Posters, verbal explanations, **and** slides had very similar **average effectiveness ratings. The public health nutritionists rated pamphlets and audiotapes as the least effective methods of communication. Photographs, bright colors, and bold graphics were rated as the most effective visual element for communicating nutrition information. The information will help the National Cancer Institute (NCI) to develop**

nutrition education tools and materials for English-speaking, low-literate adults. (HE9000456)

48
Comprehension Assessment of Diabetes Education Program Participants.
McNeal, B. Salisbury, Z. Baumgardner, P. Wheeler, F.C.
Diabetes Care. 7(3):232-235, May/June 1984.

A study assessed the compatibility of reading levels of diabetes education materials and oral instruction with patients' reading and comprehension skills among 39 patients participating in a diabetes education program. Based on performance on the Wide Range Achievement Test, the patients completed either fifth-grade level or tenth-grade level cloze tests and reading tests. Researchers administered listening tests with content at the fifth-grade level to the functionally illiterate patients. They used the SMOG readability assessment formula to determine reading level of the patient education materials. Results indicated a significant mismatch between the reading and comprehension levels of program participants and the level of oral instruction and printed materials. More than one-half of the patients could not fully comprehend educational materials at the fifth-grade level, while nearly all written materials and oral instruction were presented at the ninth-grade level or above. Results suggest that patient educators must examine written and oral diabetes patient instruction more closely to ensure that information is presented on a level appropriate for the patient. If instruction is presented at an inappropriate level, the educator has failed to provide adequate and useful information that patients require to manage their disease. 17 references. (HE8500249).

49
Consent Forms, Readability, and Comprehension: The Need for New Assessment Tools.
Mariner, W.K. McArdle, P.A.
American Society of Law and Medicine. 13(2):68-74, April 1985.

Researchers conducted a pilot study to test whether medical consent forms provide information required by the legal doctrine of informed consent. Using the United States Public Health Service (PHS) information forms for childhood immunizations as the test document, the researchers interviewed 29 persons at two pediatric clinics in Boston to assess their comprehension of the PHS form's description of the benefits and risks to their children of immunization against poliomyelitis with oral polio vaccine. The subjects were all mothers of children approximateiy 2 months old present for a routine well baby examination during which immunization against poliomyelitis is normally administered for the first time. The study randomly organized the subjects into a control group (Group A) and two study groups (Groups B and C). Researchers interviewed all subjects in the clinic to obtain data about their so&demographic characteristics, the sources of their information about polio and polio vaccine, and their attitudes toward preventive health care. Subjects in Group A were interviewed before they received the polio information form; subjects in Group B were interviewed after they read a copy of the PHS poiio form and were questioned about its content as well as their opinions; subjects in Group C were interviewed after they received the form and completed their visits with the physician. After reading the forms, few parents could answer more than four out of ten factual questions about the information, and only 30 percent of the parents could recall any of the serious risks involved with taking the oral vaccine. The reading level of the information was found to be the same level as the mean average of the parents' grade level, resulting in the conclusion that readability tests used in the form's development would have been ineffective in aiding comprehension. 36 references. (HE900041 8)

50
Criteria for the Selection and Use of Health Education Reading Materials.
Robinson, J.,
Health Education. 19(4):31-34, August/September 1988.

Printed materials are an important part of most health education programs and health educators should select them carefully. They need to consider the abilities of the target audience and to ensure that the materials can be used. A number of variables influence the selection of written materials for use in health education. Reading level is an obvious first consideration. Health educators in schools have the

help of other educators in choosing appropriate reading levels; community health educators are less fortunate but can rely on several readability formulas, notably the Flesch formula, which measures readability to the fiih grade level, and Fry formula, which determines readability to the first grade level. Even though the reading level is appropriate, there is no assurance that the reader will comprehend the materials. It is important that the health educator choose materials within the cognitive abilities of readers with respect to their previous experience and vocabulary. Motivation and cultural factors also affect comprehension. The health educator must know as much as possible about the readers before selecting printed materials for health education programs. 8 references. (HE8801 303)

51
Dealing with the Illiterate Patient...You Can't Read Him Like a Book.
Loughrey, L.
Nursing 83. 13(1):65-67, January 1983.

Reading ability falls into three main categories: (1) The independent level, where the reader recognizes 98 percent of the words and understands 90 percent of the content, (2) the instructional level, where the reader recognizes 95 percent to 98 percent of the words and understands 75 percent to 90 percent, and (3) the frustration level, where the reader recognizes 90 percent or less of the words and understands less than 50 percent. Because 21 million Americans cannot read, health professionals should be prepared to instruct patients whose reading skills are at the frustration level. It is first necessary to determine if the patient is illiterate. This requires a knowledge of the various ruses used to disguise the problem. Once a reading problem is determined, it is necessary to teach from within the patient's defense mechanisms. Several methods are suggested, such as drawings, tape-recorded instructions, and use of techniques from basic reading classes. 3 references. (HE9000427)

52
Developing and Adapting Written Materials for the Low Literate Hypertensive.
Melton, R.J.
Salinas, CA, Monterey County Department of Health, 10 p., 1999.
Available from: Anne Wheelis, Coordinator, Hypertension Control Program, Monterey County Department of Health, 955 Blanco Circle, Suite D, Salinas, CA 93901. (408) 755-4583.

Coordinators from the Monterey Department of Health's Hypertension Control Program in California have created Developing and Adapting Written Materials for the Low Literate **Hypertensive to assist educators** in meeting the needs of low literacy English and Spanish readers. The guide contains original pieces written by the department and adapts materials from other sources. The guide outlines the steps in the process of developing and adapting materials accessible to low literacy readers and their health care providers. Steps include identifying need, evaluating existing materials for readability and cultural appropriateness, material development and adaptation, and field testing. This process can be applied to health education materials for any target audience and health problem. (HE9101551)

53
Developing Health and Family Planning Print Materials for Low-Literate Audiences: A Gulde.
Zimmerman, M. Newton, N. Frumin, L Wiiet, S.
Washington, DC, Communication Department, PATH, 1990 M Street, NW., 64 p., 1989.
Available from: Communication Department, PATH, 1998 M Street, NW., Suite 700, Washington, DC 2 0 0 3 6 .

Developing Health and Family Planning Print Materials for Low-Literate Audiences offers step-by-step guidelines for developing health and family planning support materials for illiterate and low-literate groups worldwide. Each of eight sections discusses a separate step in the development of materials. The section Target Audiences explains how to profile audiences to determine their needs. Project Planning offers tips on formulating work plans to allocate time and financial resources. Audience Research describes methods to derive information from the target audience for needs assessments. Message Development details the process of using data from Focus Group Discussions and audience research to develop messages and properly communicate them. Guidelines for Materials Production provides tips on preparing materials. Pretesting and Revision explains

ways to ensure that the intended message is conveyed and the materials are acceptable to the target audience. Printing raises issues in printing and production that should be considered. Distribution and Training describes how to disseminate the materials and train health workers to use them effectively. Evaluation describes methods to examine the field use of the materials and their impact on the intended audience. 32 figures, 18 references. (HE9000430)

54

Do Patients **Understand Patient-Education Brochures?**

Taylor, A.G. Skelton, J.A. Czajkowski, R.W.
Nursing and Health Care. 3(6):305-310, June 1982.

A readability study at the University of Virginia assessed patient understanding of patient education brochures in two phases. In the first phase of the study, subjects were 200 patients in the reception areas of two self-care rehabilitation units, the general medical clinic, and the two outpatient pharmacies of the hospital. Researchers asked patients their age and highest level of education completed. The sample included 134 women and 66 men having a median age of 41 years. The median educational level of the sample was 11 years of schooling. Although a substantial proportion of the 200-person sample were high school graduates and some were college educated, a slightly greater proportion had not completed high school. Results indicate that health care professionals using written materials targeted for this population should take into account the distribution of educational levels. In the second phase of the study, researchers selected and analyzed a sample of 94 written materials distributed by various hospital units using the Flesch and Fry methods for determining readability. Flesch's analytic methodology for estimating the comprehensibility of written materials uses word and sentence length to index readability. The materials included brochures, pamphlets, and pharmacy cards. Fry's method uses the mean number of syllables per 100-word sample and the mean number of sentences per 100-word sample as its basic inputs. These values are plotted on a graph that translates them into school-grade equivalents. Study findings showed that many of the materials were wriien at levels that exceeded the reading ability of the patients for whom such materials were intended. Though reading comprehension does not solely depend on the features of word or sentence length, the use of such testing should sensitiie health care professionals to the fact that some patients could be handicapped by an inability to comprehend much of the instruction given to them. Health care professionals should exercise selectivity in matching instructions to the patient. 4 tables, 1 figure, 16 references. (HE900041 9)

55

Educational Materials for Low Literate Populations: A Methodology for Design, Use and Evaluation.

Rice, M. Valdivii, L
Washington, DC, Pan American Health Organization, 11 p., 1990.
Available from: Pan American Health Organization, 525 23rd Street, NW., Washington, DC 20037. (202) 861-3200.

The Pan American Health Organization (PAHO) has developed a methodology for designing, using, and evaluating health education materials. Based on a methodology developed in Spanish for use in Latin American countries, the English language version of the methodology observes five basic operating principles. (1) The community perspective in the design and use of health education materials must be reflected in at least three aspects: Respect for cultural values and traditions, relevance to community needs and interests, and participation of the community in the preparation and use of the materials. (2) The materials must be an integral part of a health education program, not considered the health program in and of itself. Educational objectives should be based upon well-defined educational programs that contain several elements and strategies, only one of which is educational materials. (3) Educational materials must coincide with the health care services that are available. The fact that materials are part of an educational program also means that they must be mutually reinforcing and complementary. (4) Materials must be pretested for their effectiveness in communicating the intended health message. (5) Materials must be distributed with instructions on how, when, and with whom they should be used. PAHO developed a list of general and specific criteria for the methoddogy for evaluation of the quality and potential efficacy of educational materials. The evaluation scale provides

a point system to evaluate materials that have been designed elsewhere and to help health personnel decide if the materials would be appropriate with their target audiences. The scale also promotes self evaluation by the community in the development of its own materials. (HE9000465)

56

Emergency Department Patient Literacy and the Readability of Patient-Directed Materials.

Powers, F.D.

Annals of Emergency Medicine. 17(2):124-126, February 1966.

Researchers at the University of Virginia Medical Center conducted a study to determine the literacy level of hospital patients and to assess whether readability of written material given to patients in the hospital emergency department (ED) matched the literacy level of these patients. The researchers collected demographic and educational-background information from 111 consecutive ED patients. The study also examined patient brochures on back pain and cardiovascular disease, the hospital operative consent form, and a State prepared brochure entitled Your Emergency Department Visit. Results showed that even though the median educational level of the patients who participated was tenth grade, 46 percent could not be expected to read at the eighth grade level, and 20 percent could be considered functionally illiterate. Using the Fry method, all the tested reading mater&l showed readability levels of at least eighth grade with the range climbing to college level. Results indicate that the consent for surgery form required at least an eleventh grade level of readability. It was determined that more than 50 percent of the ED patients in a teaching hospital may read below the level required to understand standard discharge instructions. ED patient populations should be surveyed and the reading level of written material adjusted accordingly. 1 table, 1 figure, 6 references. (HE9000420)

57

Evaluating Printed Materials.

Allensworth, D.D. Luther, C.R.

Nurse Educator. 11(2): 18-22, March/April 1988.

Health education literature should be carefully chosen because of its Important rde in the delivery of health messages. Factors to consider in choosing health care literature include (1) readability, (2) motivational appeal, (3) legibility, (4) learnability, and (5) usability. Readability tests are important, and should be used, but it must be recognized that they do not measure all the necessary parameters needed to determine the true comprehensiveness level of a particular piece of literature. Legibility refers to readability and comprehension. Type style and size, the elimination of page glare, and page design should all be considered. It is suggested that motivating the reader to read a particular piece of literature can be enhanced by personalizing the piece, taking into account cultural, racial and sexual differences, and avoiding stereotypical poses and occupational roles. Organizing the mater&l so that important points are reinforced, liberal use of Ionic aids, frequent summaries, and thought provoking questions can be used to enhance learnability. The material should be reviewed to determine its appropriateness for the target group intended. An evaluation checklist can be used to determine the literature's readability and comprehensibility to a targeted group. 1 table, 13 references. (HE9000421)

58

Evaluation of Patient Education Mater&Is: Focus on Readability.

Pastore, P.O. Berg, B.K.

Patient Education and Counseling. 9(2):216-219, April 1987.

The authors present a practical guide for developing and evaluating patient education materials, specifically the readability of pamphlets. Before writing patient education materials, health educators and others should consider the readability of the content. United States Bureau of the Census data indicate that 25 percent of the general population may not comprehend materials written at the eighth grade reading level. Techniques which enhance readability include using short sentences, simple words; and only those words that are needed. There are a variety of formulas available for testing the readability of patient education materials; The use of the FOG Index In assessing readability of patient education materials Is illustrated. 3 references. (HE8700499)

59

Evaluation of the Readability of Prenatal Health Education Materials.

Farkas, C.S. Glenday, P.G. O'Connor, P.J. Schmeltzer, J.

Canadian Journal of Public Health. 78(6):374-378, November/December 1987.

Researchers used a multimethod approach to develop and test the readability of prenatal health materials. The multiple methods included selection of paragraphs for analysis from prenatal materials, application of five readability formulas, development of a questionnaire based on selected words/sentences and paragraphs, and development of a method of assessing the comprehension of the prenatal materials by persons with low literacy skills. Researchers selected respondents from a sample of pregnant women, women with low reading skills, and students at the grade level considered necessary for functional literacy. They selected three pamphlets from a Health Center Prenatal Screening Clinic and obtained the background information regarding the development and production of these materials. The study used five formulas to assess material readability: The FOG Index, the FORCAST Formula, the Fry Reading Graph, the Harris-Jacobson formula, and the SMOG Index. Subjects read a paragraph from the pamphlets and stated what they thought it said to test comprehension restatement. Results indicated that the material required an average grade level of eight or above to understand and that an above average grade 8.9 reading level to a college education may be needed for good comprehension of the materials. The comprehension restatements exhibited a high number of partially correct answers indicating that the message was lost in too many sentences and words. 5 tables, 20 references. (HE9000422)

60

Explaining Medication Use: Low Literacy Patients. Is Reading Ability Affecting Your Patient's Therapy?

National Council on Patient Information and Education.

Talk About Prescriptions. Page 6, October 1968. **Available from: National Council on Patient** Information and Education, 666 Eleventh Street, NW., Suite 810, Washington, DC 20001.

Establishing communication with illiterate patients is a critical public health challenge. Potential adverse medication outcomes due to functional illiteracy may prove greater than health threats from other problems that have traditionally received more attention. Despite its serious potential consequences, illiteracy is an easy condition for health care professionals to overlook. Most poor readers do not readily admit that they cannot read. Although dropping out of school early is one reason for poor reading, it is only one of many, including physical and learning disabilities, lack of interest at the time of instruction, Ineffective teaching, and television. Individuals with poor communication skills have difficulty relating to abstract or general points and difficulty in reading complicated charts or tables. A variety of formal evaluation tools exist, such as the Wiie Range Achievement Test for word recognition and the cloze test of reading comprehension. Liieracy experts suggest that certain patient behaviors can alert the professional to suspect a reading deficiency. Some believe that whenever patients do not comply with instructions, providers should consider the possibility of functional illiteracy as a contributing factor. People with poor communication skills can learn about their medicines and take an active rde in treatment. Appropriate oral and written instruction is the key. (HE9000463)

61

Gap Between Patient Reading Comprehension and the Readability of Patient Education Materials.

Davis, T.C. Crouch, MA. Wills, G. Miller, S. Abdehou, D.M.

Journal of Family Practice. 31(5):533-538, November 1990.

A study sought to determine (1) the reading comprehension level of primary care patients in several different types of outpatient care settings, (2) the readability level of patient education materials and forms used in these clinic settings through computerized analyses, and (3) the compatibility between readability of written clinic materials and patient reading comprehension levels. Researchers tested a convenience sample of 151 adult primary care patients for reading comprehension in five ambulatory care settings (three university-based clinics, one community health center, and one private practice). The university and community clinics serve

poor and low-income families. Research assistants used a structured questionnaire to elicit age, education, employment status, and age at first pregnancy. Each participant completed the Peabody Individual Achievement Test (PIAT). The PIAT contains two parts: A reading recognition subtest of 84 items ranging in difficulty from preschool through high school that requires between 5 and 10 minutes for completion, and a reading comprehension subtest of 66 items that requires between 5 and 40 minutes to complete. Wiih the reading comprehension test, the patient silently read a sentence and then selected from four alternate illustrations the best representation of the sentence. Researchers stopped the test when a participant missed five out of seven consecutive sentences. Analysis for readability of patient education materials and forms from each clinic using a standard computer program showed a large discrepancy between the average patient reading comprehension and the ability levels needed to read patient education materials. The average reading comprehension of public clinic patients was sixth grade fiih month; 40 percent of all public clinic patients tested read below the fifth-grade level and could be considered severely illiterate. Most tested patient education materials required a reading level from eleventh to fourteenth grade, and standard institutional consent forms required a college-level reading comprehension. 4 tables, 26 references. (HE91 00593)

62

Guide **to Preparing Easy-to-read Materials.**
US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung, and Blood Institute, Smoking Education Program.
National Heart, Lung, and Blood Institute, Smoking Education Program, 22 p., 1989.
Available from: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung, and Blood Institute, Smoking Education Program, 4733 Bethesda Avenue, Suite 530, Bethesda, MD 20814. (301) 9513260.

The Guide to Preparing Easy-to-read Materials instructs health professionals on how to review and write education materials targeted to good and poor readers. The manual contains three parts: Choosing the Reading Level, Wrlling Easy-to-read Materials, and Creating Clear Graphics. Techniques for preparing easy-to-read materials include (1) choose an easy reading level, (2) get your message across, (3) write simply and clearly, (4) help readers remember your message, (5) focus eyes on your message, and (6) make the copy easy to read. The manual provides the reader with an explanation of the SMOG index which determines the grade level that the reader must have acquired to read a given item. (HE9101552)

63

A Guide to Writing Effective Patient Education Materials.
Boyd, M.D.
Nursing Management. 18(7):56-57, July 1987.

Many patients in the United States read at the eighth grade level or below but most health and patient education materials are written above the eighth grade reading level. Techniques for making patient education materials more readable include (1) keeping the sentences short and to the point, (2) avoiding complex grammatical structures, (3) writing in the active instead of the passive voice, (4) using the second person pronoun (you) instead of the third person (the patient, indiviiuals), (5) using one-syllable or two-syllable words where possible, (6) limiting the number of words containing three or more syllables, (7) keeping the eye span to no more than 70 characters, (8) presenting the most important information first whenever possible, (9) using sufficient spacing to provide the eyes with a rest, and (10) not using all capital letters. One way to evaluate newly developed materials is to interview patients who have completed various grade levels and get their reactions to the materials. Another is to use the SMOG formula to determine the grade reading level of patient education materials. The SMOG formula invdves dividing the number of polysyllabic words by the number of sentences, multiplying that average by the number of polysyllabic words, and finding the square root and adding a constant of three. 10 references. (HE8700708)

64

Guidelines: Writing for Adults Wiih Llmited Reading Skills.
US Department of Agriculture, Food and Nutrition Service, Office of Information.

Washington, DC, US Department of Agriculture, 23 p., February 1988.
Available from: Food and Nutrition Information Center, NAL, Room 304, 10301 Baltimore Boulevard, Beltsville, MD 20705. (301) 3443719.

Guidelines: Writing for Adults Wiih Limited Reading Skills provides instructions to help writers prepare materials for adults with limited reading skills. The manual is directed both to writers and editors who have never written for low-literacy audiences or who want to sharpen their skills and to persons not trained as writers and editors but whose responsibilities require preparation of such materials. The manual addresses basic points in preparing informational material including knowing your audience, deciding on and organizing your message, writing your message, using illustrations to support the message, formatting to get attention, pretesting before production. The manual also provides a checklist for written material helpful in reviewing final drafts, (CV0006663)

65

Health Education for Adults With Low Literacy Skills.

Doak, LG. Doak, C.C.
Diabetes Educator. 4(4):9-11,15-16, Winter 1978-1979.

A study describes the nature and magnitude of adult illiteracy in terms of its impact on diabetes education and suggests approaches for health professionals to cope with this problem. Although one dimension of the problem is the large number of illiterate adults, an equally important dimension is the general lack of awareness on the part of clinical staff as to the extent of illiteracy among their patients. Hospitals might assess the literacy levels of their patients, and then employ both teaching materials and programs at the appropriate levels. One path out of this dilemma for the educator is to split the education programs into two levels: one for the upper half and one for the lower half of the population in terms of literacy skills. Nevertheless, the educator must still determine the literacy level of each patient. Educators can approximately determine a patient's comprehension level by employing a brief series of questions that require responses or other feedback. In the cloze procedure, the interviewer systematically deletes words from a chosen selection and replaces each deleted word with a an arbitrary lo-letter blank. The cloze score is the proportion of missing words correctly filled in. Only gross indications of reading comprehension levels are necessary, and educators should tailor the assessment process to fii the existing procedures at each instltution. Educators can make written materials more readable for adults having low-literacy skills by organizing the materials in a logical sequence, using short sentences, short paragraphs, and as few scientific words and concepts as possible consistent with the minimum educational content required. 14 references. (HE91 01553)

66

Health Information Seeking and Reading and Comprehension Abilities of Cardiac Rehabilitation Patients.

Boyd, M.D. Feldman, R.H.L.
Journal of Cardiac Rehabilitation. 4(8):343-347, August 20, 1984.

The cardiac rehabilitation program at the Franklin Square Hospital in Baltimore uses a multi-method approach in teaching. Researchers conducted a study (1) to determine the sources of health information about cardiovascular disease that patients have used in the past, (2) to determine the sources of health information about cardiovascular disease that patients plan to use in the future, (3) to determine patients' perceived barriers to seeking health information in the future, (4) to determine patients' learning preferences, and (5) to assess patients' reading and comprehension abilities. During the 3-month study period, physicians referred 56 myocardial infarction patients to the cardiac rehabilitation program. Researchers selected 23 male and seven female subjects. The study used three instruments: (1) A patient learning profile, to obtain demographic, personal, and medical data; (2) the level II subtest of the Wide Range Achievement Test, to assess the reading abilities of the patients; and (3) the Test of Reading Comprehension, to assess the patients' abilities to comprehend written information. Test instruments were administered between days 5 and 8 of the patient's hospitalization. The interview and testing lasted approximately 30 minutes for each patient. Findings indicate that the patients planned to use doctors, nurses, and television as future sources of cardiovascular information and that embarrassment

was the greatest barrier to patients obtaining information. Preferred learning style was one-to-one interactions with doctors and nurses. The patients' mean reading and comprehension abilities were at the eighth grade level, which indicated that they probably could not read and understand the current cardiovascular literature available to them. 3 tables, 29 references.

67
How Effective Are Your Patient Education Materials? Guidelines for Developing and Evaluating Written Educational Materials.
Farrell-Miller, P. Gentry, P.
Diabetes Educator. **15(5):418-422,** September/October 1969.

The first step in developing educational materials is to perform a needs assessment. Factors to be taken into consideration in conducting such an assessment include the target population's reading level, educational background, cultural makeup, and economic level. It is also necessary to consider where the educational material will be used as well as what the patient wants and needs to know, Information may be gathered through discussion with health professionals, direct observation, the use of patient questionnaires and surveys, and the documentation of patient records and review of nursing/dietary care plans. Existing written educational materials should be reviewed to determine what materials are already available and to gather ideas for the development of new materials. Once a needs assessment has been completed, the next step is to identify learning objectives for the material to be developed. Creating concrete objectives helps determine the content and organization of the information sought to be conveyed, clarifies the expected learner outcome, and provides a means of evaluating the materials. Educational materials for the general population should be written below an eighth-grade reading level. A clear and direct style may be achieved through the use of the active voice and by using positive statements in the second person. Readability of materials should be assessed using objective measures such as the SMOG Readability Formula. The materials should also be evaluated by colleagues for continuity, clarity and accuracy of information. Finally, several patients should read the materials and then explain what they have read to assess their level of understanding. **4 tables, 11 references. (HE9000571)**

68
How To Guide for Health Promotion: 5 Easy Steps!
Olson, S.
Austin, TX, Texas Department of Health, Public Health Promotion Division, 46 p., 1965.
Available from: Texas Department of Health, Public Health Promotion Division, 1100 West 49th Street, Austin, TX **78758. (512) 458-7405.**

The How To Guide for Health Promotion: 5 Easy Steps!, developed by the Public Health Promotion Division of the Texas State Department of Health, assists staff of local and regional health departments in planning health promotion activities. The manual is a reference guide for the experienced health educator, or a step by step self-learning module for those without training but with health promotion responsibilities. The guide covers fiie basic steps: Problem identification, educational and cultural diagnosis, planning intervention strategies, implementation and monitoring, and evaluation. Special sections cover lecture preparation, Indiviiual and group education, low literacy education, media preparation, and training methods. **(HE8801313)**

69
Improving Patient Comprehension of Literature on Smoking.
Meade, C.D. Byrd, J.C. Lee, M.
American Journal of Public Health. 79(10):1411-1412, October **1989.**
Funded by: Research funded by **the American Lung Association Wisconsin.**

A study evaluated the effect of simplification of smoking literature on patient comprehension. The Minnesota Interactive Readability Approximation Microcomputer Program developed two similar booklets, each entitled Quit Smoking and Feel Good. One booklet was written at a fifth grade reading level, the other at a tenth grade reading level. To evaluate smoking knowledge and recall,' Investigators and a panel of experts developed 24 questions based upon the content of the booklets. Researchers systematically diviied questlons into two **12-question** tests (pretest and posttest). They then selected

smoking subjects from three Primary Care clinics based in a public hospital, a veterans hospital, and a community health center. Subjects were randomly placed into one of three groups: An experimental group in which subjects received a smoking booklet written at a fiih grade reading level; an experimental group in which subjects received a smoking booklet wriien at a tenth grade reading level; and a control group that received neither booklet. In addition to the pretest, all subjects completed a posttest and the Wide Range Achievement Test Level II. Subjects answered questions about their educational background and provided other demographic information about themselves. Subjects who had received the fiih grade level literature showed 13 percent better comprehension than those receiving the tenth grade booklet. Results indicate that educational levels are poor predictors of reading ability. It is recommended that there be continued development of educational materials at low reading levels, and that readability testing be used to help assure that the message is being comprehended by the intended audience. 24 references. (HE9000416)

70

Improving the Effectiveness of Nutrition Education Materials for Low Literacy Clients.

Nitzke, S.

Nutriiion Today. 24(5):17-23, October 1989.

Tailoring a nutrition education message to the literacy limitations and the information preferences of client groups is essential in preparing effective instructional materials. Language and presentation styles that are familiar to health and nutrition professionals are often very different from those of consumers who need to use the information. The development of health communication programs can be divided into six stages: (1) Planning and strategy selection, (2) concept development, (3) message execution, (4) implementation, (5) assessment of effectiveness, and (6) analysis to provide feedback for future cycles of program development. Effectiveness of nutrition education for low literacy clients can be improved by revision at each stage of the development process. Program objectives and target audiences are tentatively identified in the planning and strategy selection stage. Factors to be assessed for determining learner readiness include information processing capacity, affective state, prior learning and experience, and preferred approaches to learning. Careful writing and rewriting of nutrition messages should address content, style, format, and organization. When the message and the means of dissemination have been adequately planned and pretested, instruction strategies can be implemented and their success monitored. 8 references. 16 bibliographic references. (HE9000046)

71

Increased Readability Improves the Comprehension of Written Information for Patients Wiih Skin Disease.

Baker, G.C. Newton, D.E. Bergstresser, P.R.

Journal of the American Academy of Dermatdogy. 19(6):1135-1141, December 1988.

As part of a study about ways physicians can improve communication with their patients, researchers analyzed a patient education pamphlet used by the American Academy of Dermatdogy. Researchers used the computer software package Rightwriter to analyze the readability of the educational pamphlet. On the Flesch interpretation scale, the pamphlet's reading ease rated as difficult and readability was at the eleventh-grade level. The pamphlet was rewritten to (1) shorten average sentence length; (2) use simple synonyms for uncommon words whenever possible; (3) arrange multiple items in vertical cdumns; and (4) use subtitles, underlining, and boldface to provide a visual image of the pamphlet's organization. After rewriting, the pamphlet scored at the seventh-grade level, with a reading ease rating of standard. Forty-nine first-year medical students and 23 private dermatology patients read the original or modified versions and took a nine-question test. Patients and students who read the modified version scored as well or better on every question and did significantly better on two questions. However, subjects who compared the two versions did not consider the original more difficult to read. Patients did consider the termindogy difficult and students did think that more information about treatment was desirable. Results indicate that the modified version did result in greater understanding of the material and that rewriting according to well recognized formulas can enhance the usefulness of many written patient education materials. 13 references. (HE8901071)

72

Level of Reading Difficulty in the American College of Obstetricians and Gynecologists Patient Education Pamphlets.

Zion, A.B. Aiman, J.

Obstetrics and Gynecology. 74(6):955-960, December 1969.

Many health educational and informational materials are wriien at a level of difficulty above the reading ability of the intended audience. The SMOG readability formula was used to assess the level of reading difficulty of all 74 English-language patient education pamphlets developed by the American College of Obstetricians and Gynecologists (ACOG) Committee on Patient Education. Of these, 61 are written at a reading level of eleventh grade or higher. Although the mean reading education level in the United States is at grade 12.6, the mean literacy level is at or below eighth grade. With the exception of one ACOG pamphlet written specifically for low-readability audiences, all pamphlets are written at a level higher than the literacy level of many women. This disparity is accentuated for health-related materials because scientific and technical terms further reduce the level of comprehension. The SMOG formula is a simple means to ensure that educational materials are written at a level appropriate for the intended audience. **2 tables, 35 references. (HE9000443)**

73

Life Beyond Pamphlets: Creating Effective Words and Images for Health Promotion, Proceedings of the Seventh Annual Health Promotion Division Workshop, June 1, 1988.

Ontario Public Health Association. Canada Ministry of Health.

Toronto, Ontario, Canada, Ontario Public Health Association, 1966.

Available from: Ontario Public Health Association, 466 Queen Street, E., Suite 202, Toronto, Ontario, Canada M5A-1T7. (416) 367-3313.

The Life Beyond Pamphlets workshop addressed the problems inherent in promoting health through brochures and looked at ways to make health promotion materials relevant and effective. Participants had the opportunity to attend two different sessions. The readability workshop sought to help participants make the best match possible between the reader and the materials. Participants had an opportunity to practice to write more dearly and to critique some existing materials. The visual stories workshop sought to Introduce participants to a number of creative concepts to help discover new ways to deliver health promotion messages. Both workshops strongly emphasized the need to know the target audience and to work with the audience to ensure effective methods for communicating health promotion messages. Of the 100 participants, 60 completed workshop evaluation forms with the majority giving the workshops an overall rating of good or excellent. **(HE9101554)**

74

Literacy and Health Project, Phase One: Making the World Healthier and Safer for People Who Can't Read.

Ontario Public Health Association. Frontier College. Toronto, Ontario, Canada, Ontario Public Health Association, 61 p., 1990.

Available from: Ontario Public Health Association, 466 Queen Street, E., Suite 202, Toronto, Ontario, Canada M5A-1 T7. (416) 3673313.

The purpose of the Liieracy and Health Project research study was to explore the relationships between literacy and health in Canada. The study used a variety of methods: A review of health status data from major health status surveys; a comprehensive, multidisciplinary review of the literature, considering both published and unpublished information; a brief questionnaire to health and literacy organizations across Ontario; three case studies at different sites in the province; and a number of key informant interviews. Evidence suggests that Illiteracy leads to poorer health through a combination of both direct and especially indirect intervening variables. Direct impacts include incorrect use of medications, not following medical directions, errors in administration of infant formula, and safety risks, particularly at the workplace. Indirect impacts include poor lifestyle practices, poverty, stress and low self esteem, dangerous work environments, lack of access to health information, and lack of use or inappropriate use of medical and health services. Three underlying themes emerge from a consideration. of the direct and

indirect intervening variables through which illiteracy affects health status: Lack of knowledge, lack of resources, and lack of empowerment and control. Potential solutions include social policy level action, heightened awareness within the health community, working together with the community, provision of health information other than via the written word, and simplifying written information about health. 92 references. (HE91 01555)

75
Literacy Crisis: **Implications for Nutrition and Dietetic Professionals.**
Hynak-Hankinson, M.T.
Topics in Clinical Nutrition. 4(4):63-70, October 1969.

Health professionals have used a number of formulas to determine the reading level of materials written in the field of health care. These include the **SMOG** readability formula, the FOG readability formula, the Fry readability graph, the wide-range achievement test (WRAT) and the cloze procedure. A readability assessment of pamphlets used to instruct patients with diabetes mellitus indicated that half of the booklets exceeded a tenth-grade level of reading difficulty. A tenth-grade reading level is beyond the comprehension and reading level of one half of the adult population of the United States. The effectiveness of nutrition education relies on changes in the cognitive and affective domain and the immediate as well as long-term behavioral effects. Dietetic and nutrition professionals tend to use terminology, language, presentation of information, and organization of content in a way that is unfamiliar to consumers. Dietitians employed in health care institutions need to be cognizant of the magnitude of the literacy crisis. Nutrition and dietetic professionals can use technical and humanistic strategies in dealing with the national problem of illiteracy. 1 table, 20 references. (HE9101 556)

76
Nutrition Education Opportunities: Strategies to Help Patients Wiih Limited Reading Skills.
Second Ross Roundtable on Current Issues in Public Health;
Columbus, OH, Ross Laboratories, **77 p., 1988.**
Available from: Ross Laboratories, Columbus, **OH** 43216.

Nutrition Education Opportunities: Strategies to Help Patients With Limited Reading Skills is a report on the Second Ross Roundtable on Current Issues in Public Health, which brought together nutritionists and other health care providers with literacy professionals to address the issue of nutrition education for individuals with limited reading skills. The principal problem with most health instructions is that they are written at too high a reading level for much of the public. Other often-cited literacy-related problems with health literature include excessive content; mismatched **logic, language, or experience; difficult** typography; and lack of pretesting. Visuals, when used to show concepts, make the materials more attractive and appealing, as **well as clarify hard-to-understand details that are often misunderstood by** persons with low-literacy skills. The report includes reproductions of discussions and case studies presented by conference participants. Guidelines **for preparing health care materials for patients with limited reading skills cover the areas of** (1) designing an instructional piece, (3) including the patient in the process, **(4) teaching the patient, and (5) cooperating with other health care professionals. (HE9000459)**

77
Outcome of an Osteoarthritis Education Program for Low-literacy Patients Taught by Indigenous Instructors.
Bill-Harvey, D. Rippey, R. Abeles, M. Donald, M.J. Downing, D. Ingenito, F. Pfeiffer, C.A.
Patient Education and Counseling. 13(2):133-l 42, April 1969.
Funded by: National Institutes of Health under Grant no. AM20621.

An interdisciplinary team, including community leaders, developed an osteoarthritis education program for low-income older adults of low literacy and a manual, written in a script format using a conversational tone at an eighth grade reading level. Ten community leaders, identified through community support systems, received 30 hours of training to conduct the program. **The program targeted the economically disadvantaged elderly in an inner city neighborhood of Hartford, Connecticut, where 60**

percent of adults had less than a high school education. Topic areas for the 6 weeks were (1) overview of the course, (2) exercises for problem joints, (3) self-help aids and ways to protect the joints, (4) medications, (5) pain, nerves, depression, and ways to relax, and (6) home remedies and unproven cures. The activity-centered classes included a hands-on demonstration each week. Participants completed pretests and posttests orally, using pictures and a structured questionnaire. The tests measured knowledge of the disease and self-reported function, exercise, attitude, and use of adaptive equipment. Seventy-s& people, 75 percent of the original enrollees, completed the course. There was a significant increase in knowledge and improved exercise ability among the participants. Functional improvement, less easy to assess, was not statistically significant, but use of adaptive equipment increased. Attitude improved for 47 participants. The program was well-received, and participants have expressed the desire for additional classes or get-togethers. 18 references. **(HE8900840)**

78

Patient Comprehension Profiles: Recent Findings and Strategies.

Doak, L.G. Doak, C.C.

Patient Counselling and Health Education. **2(3):101-106,** 1986.

Researchers measured the reading levels of (1) 100 booklets, pamphlets, and special instructions in use at the Public Health Service Hospital in Norfolk, Virginia, and (2) 87 representative patients. One experienced rater used the SMOG readability formula to evaluate the reading levels of the literature. A profile of the reading levels demonstrated that the written materials ranged from the fourth to the sixteenth grade reading level, but that few materials fell below the eighth grade level. Using two brochures, one at the tenth-grade level and one at the fifth-grade level, researchers conducted a word recognition test and two cloze tests to assess the reading levels of the subject patients. Word recognition scores of the patients showed that more than 69 percent had word recognition levels at the seventh and eighth grade levels, and that the average word recognition skill level was four or five grades lower than the average patient's claimed educational level. Comprehension profiles derived from the tests indicated that 36 percent of the patients could not read well enough to take the fifth grade cloze test, that 26 percent of the patients could not understand either written or spoken instructions, and that 49 percent of the patients comprehended at the fiih grade level. These results suggest that health instruction materials shoufd present only the minimum essential information in simple language and sequent&l order, with an emphasis on the patient's point of view and behavior rather than theory. 9 references. **(HE8100926)**

79

Patient Literacy and the Readability of Smoking Education Literature.

Meade, C.D. Byrd, J.C.

American Journal of **Public Health. 79(2):204-206,** February 1989.

Research supported by a grant from the American Lung Association of Wisconsin.

Printed educational materials are commonly distributed to reinforce patient education and extend verbal instructions in smoking prevention and cessation programs. However, printed materials are only appropriate if they can be read and understood by their target audience. To investigate whether a disparity exists between the reading level of written education materials and the reading skills of patients, the authors compared the reading grade level of smoking education materials with the reading abilities of patients at a primary care clinic. The authors analyzed 49 samples of smoking education materials for readability using a microcomputer text analysis program that calculates six formulas of reading level estimates. Each of 258 patients indicated years of school completed and took the Wide-Range Achievement Test Level 2 **(WRAT2), a** measure that yields a word-recognition grade level score. Readability estimates of the booklets ranged from grade three to the scientific and professional level, with the majority of booklets written at above the ninth-grade level. Twelve of the forty-nine were written at the twelfth-grade level or **above. The** reported levels of education of the subjects ranged from no schooling to college, with a median level of grade 10. Reading ability measured by the WRAT2 ranged from below grade 3 to above grade 12, with a median at grade 6. Of 96 subjects who said they had completed high school, only 45 demonstrated this level on objective testing. Health educators shoufd

create positive health messages that patients want to read, can read, and can comprehend. 36 references. (HE8900169)

80
Patient's Understanding of Written Health Information.
Mohammed, M.R.B.
Nursing Research. 13(2):100-108, Spring 1984.

As health care becomes more complex, there is the tendency to use more written material, such as pamphlets and booklets, to supplement patient education. Nonselective use of healthcare material can range from total lack of communication, to a partial understanding, creating unnecessary fears and hazards. To address this problem, researchers developed a method for rapid assessment of an indiviiual's ability to understand health information wriien at the fourth, sixth, and eighth grade levels. Three hundred randomly selected diabetic patients read fiie paragraphs on health information constructed on known grade levels. Each paragraph was fdlowed by four multiple choice questions with answers that were clearly stated in the paragraphs. Legibility was carefully considered. The grade levels were determined by the Dale-Chall Readability Formula. Forty-three percent of the patients tested were unable to profii from any written health materials, and many of the others were unable to profit from the materials currently being used. The methodology of test paragraphs and questions should be used further. 8 tables, 3 figures, 4 references. (HE9000424)

81
Planning Health Education Materials.
Charlton, A.
Medical Teacher. 8(4):333-342, 1986.

Health education materials should be designed not only to present information but also to influence attitudes or behaviors. Various methods of presenting health education materials can be used, including the spoken word, printed materials, and visual materials. Primacy, clarity, and friendliness are important factors in presenting verbal messages. Two tests for readability are the SMOG grading formula and the Flesch readability formula. The SMOG formula involves dividing the number of polysyllabic words by the number of sentences and doing simple mathematical calculations, while the Flesch formula is based on the number of syllables per hundred words and the average number of words in each sentence. Layout and presentation of written messages are vital factors in effectiveness of educational materials. Whatever the message and however it is presented, the message must have real meaning and relevance for the group to whom it is directed. 32 references. (HE8700709)

82
Print Materials for Nonreaders: Experiences in Family Planning and Health.
Zimmerman, ML. Perkin, G.W.
Seattle, WA, Program for the Introduction and Adaptation of Contraceptive Technology (PIACT), PIACT Paper No. 8, 38 p., 1982.
Availabie from: Program for the Introduction and Adaptation of Contraceptive Technology (PIACT), Canal Place, 130 Nickerson Street, Seattle, WA 98109.

Print Materials for Nonreaders: Experiences in Family Planning and Health describes the development of printed materials for nonliterate persons. The Program for the Introduction and Adaptation of Contraceptive Technology (PIACT) developed materials by using a four-step approach: (1) Determining the message, (2) visualizing the message, (3) testing small-scale prototypes, and (4) training the providers and evaluating the results. PIACT has demonstrated that nonliterates can learn effectively and economically through the use of printed materials in conjunction with personalized oral instruction in indiviiual or small group settings. The report presents sample programs using these materials in five developing countries: Mexico, Bangladesh, Thailand, Nepal, and the Philippines. (HE8601382)

83
Readability and Content Analysis of Print Cholesterol Education Materials.
Glanz, K. Rudd, J.
Patient Education and Counseling. 16(2):109-117, October 1996.
Research funded by Temple University.

A study analyzed the readability levels and content of 38 printed materials dealing with cholesterol education available from U.S. government, health agency, professional association, university, and industry sources. Researchers characterized each printed material according to size, length, appearance, and primary intended audience (general public, screening participants, patients with elevated cholesterol, and patients in treatment). Researchers performed readability analyses using the SMOG and FOG Grading formulas. The SMOG Grading formula predicts the grade of a written passage correctly with a standard error of prediction of 1.5 grades. Because the SMOG formula is based on 100 percent comprehension of materials, the study also used the FOG formula which is based on 50 to 75 percent comprehension of the written mater&l. Both formulas give results in terms of the estimated grade level of education required to understand the text. Through content analysis, researchers examined the presence or absence of messages in each of nine key areas: Four related to diagnosis of elevated cholesterol and related cardiovascular risk factors and fiie concerning instrumental information about dietary behavior change and food choices. The readability assessment revealed that the average reading grade level was close to Grade 11, which is too difficult for many adults. Results from the content analysis suggest a need to address other heart disease risk factors, portion size, and the use of brand name food recommendations. 4 tables, 29 references. (HE91 69494)

84
Readability Evaluation of **Nine Patient Drug Education Sources.**
Mailett, L. Spruill, W.J.
American Pharmacy. NS28(11):33-39, November 1988.

To determine the readability of patient education materials, researchers evaluated materials from nine drug information sources using the SMOG formula. Sources were chosen because they are readily available to the practicing pharmacist. In addition, the researchers evaluated information provided on the 10 most commonly prescribed drugs in 1986. The SMOG formula determines the reading grade level necessary to fully comprehend written material. The SMOG formula is based on average sentence length and average word length, and has a standard error of prediction of 1.5 grades. The **mean** reading grade level of the medication-related information ranged from 9.6 to 12.9. Readability scores for **individual** drugs ranged from 9 to 14. The data suggest that a good portion of **the population may not understand this information; the materials evaluated exceed the reported reading grade level of the adult population** in the **United States by several years. Findings reinforce** the need for patient education **materials** to be written at a level appropriate for the majority of the population.- **Patient** materials should be designed to present the information in such a way that it can be understood by the Intended population. 5 tables, 26 references. **(HE9000595)**

85
Readability, Literacy **and HIV.**
Wells, J.A. Sell, R.L.
Nashville, TN, Third International **Conference** on AIDS Education, 21 **p.,** September 12, 1989.
Available from: Project Hope, Center for Health Affairs, 2 Wisconsin Circle, **Suite 500,** Chevy Chase, MD 29615. (361) 656-7461.
Funded by: American Foundation for **AIDS** Research.

Readability, **Literacy,** and HIV, presented at the Third International Conference on AIDS education, reviews a content analysis of AIDS educational materials selected at random from the AIDS Information Resources Directory. Researchers used the SMOG Readability Index to analyze 99 **AIDS** brochures and 37 AIDS pamphlets. Grade levels were collapsed into **five** categories: Grade school (grades 3 to 8); junior high school (grades 7, 8, and 9); high school (grades 10, 11, **and** 12); college (grades 13 to 16); graduate school (above grade 16). The distribution of brochures ranged from grades 4.8 to 17.2 with a mean of 10.9 **and** a median of 11.2. **The distribution** of pamphletsranged from grades 6.4 to 18.8 with a mean of 11.9 and a median of 11.8. The target audiences were grouped into seven categories in accordance with the AIDS Information Resources Directory: (1) Minorities; (2) teenagers and college students; (3) IV drug users; (4) gay **and bisexual men;** (5) sexually active adults; (6) other **audiences.** consisting of health care providers, persons concerned with legal issues, pastoral counselors, **and**

the like; (7) and persons being tested for HIV or testing HIV positive. Results indicate that many educational materials on the subject of AIDS and HIV are wrltten at a level that is incomprehensible to much of the population. Half of all materials assessed were above the reading level of the average sophomore in high school. Readability and accessibility to written materials varied according to target group. Written materials were found to be as inaccessible to gay and bisexual men and to sexually active adults as to minorities because the median readability grade level of materials for these groups is higher than the readability of materials for minorities.

86
Research Into Practice Example: Reaching Low-literate Adults With Printed Nutrition Materials.

Nitzke, S.
Journal of the American Dietetic Association. 87(9, Supplement):S73-S77, September 1987.

Researchers tested the language experience approach (LEA) to material development as a way to reach low-literate adults with printed nutrition materials. These researchers used tests invdving free recall, restatement of the publication's main idea, and multiple choice content recognition to determine how well the subjects assimilated and remembered the information. Analysis indicates that a LEA pamphlet was more easily understood relative to a control pamphlet written by nutrition professionals, and the perception of personal relevance was improved with the LEA pamphlet. However, content recognition and oral miscue analyses indicate that some of the wording in the LEA version of the pamphlet tended to be more difficult. Subjects who read semantic differential passages gave the LEA pamphlet more favorable ratings on the neighborly, helpful, sensible, and informative scales. Semantic differential scores of white and nonwhite respondents favored the LEA pamphlet, indicating that the materials are appropriate for use with a racially mixed target audience. 16 references. (HE8700605)

87
leaching Patients With Low Literacy Skills.
Doak, C.C. Doak, LG. Root, J.H.
Philadefphla, J.B. Lippincott Co., 171 p., 1985.
Available from: J.B. Lippincott Co., East Washington Square, Philadelphia, PA 19105. (215) 238-4200. (800) 242-7737.

Teaching Patients Wiih Low Literacy Skills contains 10 chapters. Chapter 1 explores the problem of functional illiteracy and includes discussion of the magnitude of the problem, its impact on health, and myths about illiteracy. Chapter 2 presents current theories of learning and comprehension. Chapter 3 discusses direct and indirect methods for testing patient comprehension. Chapter 4 describes strategies for testing the readability of written materials and suggests a method for testing oral materials. Chapter 5 provides a step-by-step guide to planning teaching strategies for patients with low literacy skills. Chapter 6 provides suggestions for writing and rewriting patient education materials. Chapter 7 explores the use of audiotapes in teaching patients with low literacy skills. Chapter 8 discusses the use of visual materials and computer-assisted instruction. Chapter 9 describes pretesting functions and procedures. Chapter 10 discusses learning disabilities and their implications for patient education. (HE8500495)

88
Teaching the Illiterate Client Does Not Have to Be a Problem.
Dunn, M.M.
Family and Community Health. 8(3):76-80, November 1985.

Health care providers work in a variety of settings and are likely to encounter illiterate clients with health education needs. Innovative teaching strategies exist that are helpful for illiterate clients. The literature on teaching moderatdy and severely handicapped students is a rich source of teaching strategies that can be employed with adult illiterates. The use of visual stimuli in training procedures is valuable to increase the independence of mentally retarded adults through self management and to decrease their need for constant supervision. The effective use of audiovisual media can do much to eliminate the potential problems health care providers face in programming for handicapped learners. If the health care provider has developed a good rapport with the client and has a number of days to work with the

client, illiteracy will not interfere with the learning. 7 references. (HE8600518)

89
Teaching the Illiterate Patient.
Walker, A.
Journal of Enterostomal Therapy. 14(2):83-86, March/April 1987.

Nurses, especially enterostomal therapy (ET) nurses, who have a large responsibility for patient teaching need to identify the illiterate patient and to choose appropriate and effective resources for this population. Recognizing the illiterate patient requires an awareness of signs from these patients and interviewing methods and skills that help to distinguish between normal stress reactions and exaggerated stress related to an inability to read. Illiterate patients will commonly try to conceal their illiteracy and will make inventive excuses to avoid discovery. Accurate signs of illiteracy include (1) a limited ability to organize thoughts and perceptions, (2) a narrow perspective that relates only to personal experience, (3) an inability to understand groupings or lists, (4) talking out of context, and (5) extreme restlessness. For learning to occur, the patient must comprehend what the nurse is teaching. Planning of a teaching strategy should involve five steps: (1) Teach the smallest amount possible to accomplish the objectives; (2) make a point as vivid and as explicit as possible; (3) teach one step at a time; (4) have the patient restate and demonstrate the procedure; and (5) repeatedly review information and procedures. The nurse must do everything possible to prevent anxiety in the patient. The majority of illiterate patients may not receive the information they need to cope with the change in body image and function related to ostomy surgery. ET nurses can make a contribution to the illiterate population by being more aware of the problem and making an effort to identify these patients. 92 references. (HE91 01557)

90
WIC Nutrition Education: Reaching the Participant With Limited Learning Skills.
Aronson, V. Warshaw, H.
WIC Currents. 10(2):7-l 0, March/April 1984.
Available from: Rose Laboratories, 625 Cleveland Ave., Columbus, OH 43216.

Because Women, Infants, and Children (WIC) Supplemental Food Program participants whose education or learning skills are limited may not benefit fully from the available nutrition information, some simple teaching techniques are suggested that can enhance the nutrition education provided to WIC Program participants who possess limited reading skills. Effective adult education Is characterized by five conditions: (1) The client feels the need to learn what is being taught, (2) the dient accepts the goals of the learning experience as her personal goals, (3) the client shares In the responsibility of the learning experience, (4) the learning experience relates to the client's experience, and (5) the client feels that she is making progress toward accomplishing her goals. Six methods can help maximize the Impact of nutrition education efforts with WIC participants: (1) Presentation of simple Information in small doses, (2) repetition of important concepts, (3) use of the interactive approach, (4) use of readable teaching materials suited to the WIC participant's interests, (5) assessment of participant's psychological perspective. Effective educational tools can usually be obtained from government agencies, pharmaceutical companies, university nutrition education departments, dairy councils, and other sources. The Nutritional Education Resource Guide complled by the United States Department of Agriculture is a helpful starting resource. 1 table, 1 figure. (HE9000429)

91
Writing for Reading: A Guide for Developing Print Materials in Nutrition for Low Literacy Adults.
Nitzke, S. Shaw, A. Plngree, S. Voichick, S.J.
Madison, WI, University of Wisconsin, 9 p., 1986.
Available from: University of Wisconsin-Madison, Department of Nutrltional Sciences, 1415 Linden Drive, Madison, WI 53706. (608) 262-2727.

Writing for Reading: A Guide for Developing Print Materials in Nutrition for Low Literacy Adults offers relevant, useful and practical tips on targeting written nutrition information to adults with low literacy skills. The tips give guidance on assessing the audience, developing materials, designing format, developing evaluations, and disseminating information. The

manual also includes a resource and bibliography section. **(CV0006819)**

92
Writing Readable Health Messages.
Manning, D.
Public Health Reports. **96(5):464-465,**
September/October 1981.

By following a few basic principles and techniques, health education writers can ensure that their messages are readable by target audiences. Use of readability formulas, which are mathematic equations **derived** by regression analysis that describe the **relation** between the reader's skill and the author's style, allows the health writer to determine the reading diffiiulty of messages. The Dale-Chall Formula, FOG Index, and **Flesch** Formula are typical of available readability formulas. The health writer should try to write at the lowest readability level that is appropriate for the target audience within the constraints of the subject matter-and without seeming condescending. Writers can also affect readers' motivation levels by using interesting linguistic styles and formats. Generally, writers should use one-syllable and two-syllable words, write in short and simple sentences, state the main idea of each paragraph at the beginning, use connectives, divide long stretches of narrative with subtitles and captions, use active voice verbs, highlight important ideas, leave plenty of open space on the printed page, add phonetic pronunciations of difficult technical terms, define diffiiult works by context clues, summarize important **points,** use illustrations and cartoons, use lists to provide sequential information, choose a clear style, use a readable print size, and use personal words and slogans to add interest. 3 references. (HE8201248)

RESOURCES

Programs

93
Barbara Bush Foundation for Family Literacy.
Somerfield, B. (director)
Community Foundation of Greater Washington, Inc.
Available from: Barbara Bush Foundation for Family **Literacy,** 1002 Wisconsin Avenue, NW, Washington DC 20007. (202) 3382008.

The mission of the Barbara Bush Foundation for Family Literacy is to establish literacy as an important value in every family in the United States, to break the intergenerational cycle of illiteracy, and to support the development of family literacy programs. Such programs are characterized by literacy and parenting education for adults, prereading and other literacy activities for children, and time for parents to use their newly acquired skills with their children. Specificaiiy, the Foundation seeks to identify effective literacy programs; provide seed money for community planning of interagency family literacy programs; award grants to establish intergenerational **literacy** efforts; support training and professional development for teachers; encourage recognition of volunteers, educators, students, and effective literacy programs; and publish materials that document literacy programs.

94
Gannett Foundation.
Dorsey, EC. (director)
Gannett Foundation.
Available from: 1101 Wilson Boulevard, Arlington. VA 22209. (703) **528-0800.**

The Gannett Foundation is the leading nongovernmental funding source of adult literacy programs in the United States; since **1985,** it has provided more than $8 million to a number of programs and initiatives. The Liieracy Challenge program, cosponsored by the Gannett Foundation and USA Today, stimulates cooperative State-level activity among adult literacy groups and agencies. The goal of the 2-year, $2.5 million competitive program is to assist permanent expansion of adult literacy services through unified, State-level leadership. Key elements of the program include improving the quality of services, adding diversity, and increasing the effective use of volunteers. In Nevada, for example, a $48,000 Literacy Challenge Grant allowed the State to enhance and expand its literacy coalition services in rural areas, State prisons, casinos, and immigrant communities. The coalition provides tutor training and volunteers; to date, between 800 and 900 tutors are teaching approximately 1,000 **adult** learners to read in Nevada. in 1988, the Literacy Challenge program awarded grants to organizations in 21 other States.

95
Head Start: A Child Development Program.
Cdvin, J. (director)
US Department of Health and Human Services, **Office** of Human Development Services, Administration for Children, Youth and Families Head Start Bureau.
Available from: US Department of Health and Human Services, **Office** of Human Development Services, Administration for Children, Youth and Families Head Start Bureau, Washington, DC. Continuing.

Head Start is a comprehensive early childhood development program covering education, health, parent invdvement, and social services, designed specifically for disadvantaged preschool children. Head Start currently serves more than 482,000 children and their families each year, including many children from minority groups. During the past five years, Head Start has also promoted literacy and adult basic education to the parents of children in Head Start. Specific **activities** of the Head Start Family Liieracy initiative include exploration of the literacy needs of Head Start families, dissemination of information on existing literacy programs, and improvement of each Head Start program's capacity to promote family literacy, training, demonstration and research. in cooperation with several government agencies and organizations, Head Start has funded numerous family literacy programs, workshops, and seminars. its adult literacy projects have served more than 1,200 adults.

96
Health Literacy Project.
Furras, S. (director)
Health Promotion Council of Southeast Pennsylvania. Available from: Heafth Promotion Council of Southeast Pennsylvania, 311 South Juniper Street, Room 396, Philadelphia, PA 19107. (215) 546-1276. March 1987-continuing.
Funded by: The Pennsylvania Health Department, Office of Chronic Disease Control, the William Penn Foundation, and the Fels Fund.

The Health Literacy Project (HLP) responds to (1) the high prevalence of disabling chronic diseases and related risk factors in local minority and low-income populations and to (2) the shortage of educational interventions vital to preventive health care. The HLP focuses on risk factor behavior contributing to cardiovascular and other chronic disease such as smoking, obesity, substance abuse, inactivii, nonadherence to treatment, and stress. The goals of the HLP are to aid members of local minority and low-income communities to achieve a higher level of competency in self management of their health and to enhance the communication capabilities of their health care providers. The program consists of four components: (1) Professional education, which sensitizes providers to the needs of poor readers and offers better communication techniques; (2) patient materiafs development which uses adult education techniques and learner verification to develop culturally sensitive health education materials understandable at a sixth grade reading level and below, induding an effort targeted to the Hispanic community begun in January 1999; (3) distribution/outreach which generates the necessary volume of materials through a low cost production and distribution process; and (4) an outcome evaluation initiated in January 1996 to assess the HLP's effectiveness as a viable public health education model. (HE90P0536)

97
Kenan Model Program.
Darling, S. (director)
National Center for Family Literacy.
Avaifabie from: National Center for Family Literacy, 1 Riverfront Plaza, Suite 696, Louisville, KY 46292.

The Kenan Model Program of the National Center for Family Literacy (NCFL) addresses the low level of literacy among a large percentage of the United States population, the growing number of children living in impoverished homes who are failing in school, and the rapid increase in the level of literacy required for employment. The program provides high quality early childhood dasses for preschool children and literacy and prevocationai training for adults, and brings parents and children together to devise ways of extending child devefopment programs into the home. Parent discussion groups focus on the difficult issues of family life and literacy. information is currently being collected on several variations of the Kenan Trust Family Literacy Model. in the area of implementation assistance, the NCFL provides information, training, mater&is, and technical assistance to new and existing family literacy initiitives throughout the United States.

98
Literacy and Health Project.
Eison, P. (director)
Ontario Public Health Association. Frontier Coiiege. Available from: Ontario Public Health Association, 466 Queen Street E., Suite 202, Toronto, Ontario M5A-1T7, Canada. (416) 3673313. Continuing.

The Literacy and Health Project, conducted by the Ontario Public Heafth Association and Frontier College, seeks to identify the major health issues concerning people with low literacy skills, to establish a network of organizations and indiviiuais concerned with low literacy and heaith care, and to deveiop a set of strategies for dealing with the relationship between literacy and health. A questionnaire requesting information about the respondents' familiarity with health problems related to illiteracy and soliciting ideas for sdutions to those problems was sent to a variety of organizations in Ontario induding public health units, community health centers, district health councils. and community literacy groups. The project reviewed published and unpublished literature about health and literacy and reviewed statistical data about health status from surveys and other sources. Researchers conducted three case studies at different sites in Ontario: One with a rural muitiservice center, one with a community health center, and a third with a literacy program. These case studies involved group and individual interviews with persons

associated with each site, including staff and learners. The project also interviewed indiviiuals familiar with the subject of health and literacy. Responses to letters and case studies largely confirmed statistics and research findings reported in the literature reviewed. The project steering committee held several workshops and a strategy meeting to study the Information collected and to formulate recommendations. 14 references. (HE90P0575)

99

National Clearinghouse on Literacy Education.
Center for Applied Linguistics.
Available from: National Clearinghouse on Liieracy Education, Center for Applied Linguistics, 1118 22nd Street, Washington, DC 20037. (202) 429-9551. (202) 429-9766.

The National Clearinghouse on Literacy Education (NCLE), an Adjunct ERIC Clearinghouse at the Center for Applied Linguistics (CAL), provides information, materials, and technical assistance on literacy education for limited English-proficient (LEP) adults and out-of-school youth. NCLE also links the diverse public and private institutions, agencies, and community groups concerned with literacy issues for the LEP population. ERIC/NCLE collects, analyzes, abstracts, indexes, and enters documents on literacy education into the ERIC database. These include research reports, instructional materials, program descriptions and evaluations, teacher/tutor training guides, and assessment materials. When possible, ERIC/NCLE also provides practical technical assistance in areas such as program design, curriculum development, materials adaption, diagnosis and assessment, and training of trainers of volunteer tutors and others who deliver literacy services.

100

Project Literacy U.S. (PLUS).
Harr, J.E. (director)
Capitd Cities/American Broadcasting Companies, Inc.
Public Broadcasting Service.
Available from: Capitol Cities/American Broadcasting Companies, Inc., Office of Corporate Initiatives, 77 West 66th Street, New York, NY 10023. December 1985-continuing.

The Project Literacy U.S. (PLUS) program alms to raise awareness of the extent and Impact of adult illiteracy in the United States and to help generate follow-through community action to deal wlth the effects of the problem. The anti-Illiteracy campaign has been undertaken in two stages, each with different goals: (1) The outreach stage, and (2) the on-air programming stage. During the first nine months of 1986, the American Broadcasting Company (ABC) and the Public Broadcasting Service (PBS) began working In their communities to help mobilize resources to deal with Illiteracy locally. The program encouraged leaders In buslness, labor, education, government, and religion to create or expand task forces, Introduce literacy hotlines, and provide the facilities and personnel that increased demand for literacy services would require. Currently, outreach activities operate through national support groups and local task forces to stimulate follow-through action. The programming phase, which began in September 1986, stimulates optimum awareness of illiteracy and makes use of national and local media to bring together those who need help with those who can help. The PLUS program incorporates network and local television and radio programming on the many aspects of illiteracy; educational formats include news coverage, documentaries, entertainment specials, themes on prime-time shows, 10 to 15 public service announcements per week, and tie-ins with local activation by ABC affiliated stations.

101

Reading Is Fundamental.
Reading Is Fundamental, Inc.
Available from: BOO Maryland Avenue, SW., Suite 500, Smithsonian Institution, Washington, DC 20560. (202) 287-3220. 1966-continuing.

The Reading Is Fundamental (RIF) program accomplishes its goal of motivating children to read by bringing books to children, by motivating them to read, and by helping parents play an active role in their children's development as readers. RIF provides workshops and publications for parents to help them encourage their children's reading. The program offers book distributions, during which children choose books to keep, that are preceded and followed by reading motivation activities. RIF motivational activities include storytelling, reading

contests, read-aloud programs, and art and drama activities. Any local public or private group or agency that wishes to serve the children of its community may operate a RIF program. RIF offers communities (1) technical assistance in organizing and operating a RIF program; (2) substantial discounts on books from 350 publishers and distributors; (3) guidance on fundraising, book ordering, and vdunteer recruiting; (4) access to information and ideas generated over the years by successful projects nationwide; (5) publications and training aids; and (6) wide-ranging personal services from the national RIF staff. RIF projects operate in schools, day care centers, community and recreation centers, centers for handicapped children, and hospitals. Books in braille and large print can be made available for the visually impaired.

102
US Department of **Education, Division of Adult Education** and Literacy.
Available from: US Department of Education, Cffice of Vocational and Adult Education, Division of Adult Education and Literacy, Washington, DC.

The United States Department of Education's Division of Adult Education and Literacy, in the Cffice of Vocational and Adult Education, has overall responsibility for providing a broad range of services focusing on the national programs invdved in the development of adult education in combating illiteracy. The Division of Adult Education and Liieracy administers the federally-funded, State-administered Adult Education Act (AEA). The AEA is currently the major Federal program that provides basic education and literacy skills. The Division of Adult Education provides services in the fdlowing areas: Federal volunteer efforts, literacy education for dder adults, adult basic education programs for disabled adults, adult education for the incarcerated, staff training programs, family literacy programs, and workplace literacy efforts. Division responsibilities are divided between two branches: The Program Services Branch (PSB) and the Program Improvement Branch (PIB). The Program Services Branch cdlects and compiles data necessary for long range planning, budgeting, and setting program policies and priorities in light of future needs and goals. The Program Improvement Branch provides national leadership and assistance to States in the improvement of instructional programs and services, teacher training and special projects, using vdunteers in Adult Basic Education programs, and in developing and implementing special State and national initiatives.

Directories and Bibliographies

103
Adult Literacy: An Annotated Bibliography.
Kazemek, F.E. Rigg, P.
Newark, DE, International Reading Association, 36 p., 1984.
Available from: International Reading Association, P.O. Box 8139, Newark, DE 19714.

Adult Literacy: An Annotated Bibliography, designed for literacy workers, teacher trainers, and program developers and directors, contains five sections: (1) The state of adult literacy, (2) ways of looking at literacy, (3) critiques of some current philosophical assumptions about literacy (4) research, and (5) teaching. Entries were taken from journal articles, books, and Eric reports. Each item for the bibliography was selected according to five criteria. First, it must exemplify the authors' philosophies: The view that reading and writing is psycholinguistic, and the view that teaching and learning is humanistic, not behavioristic. Second, the material must have both immediate and long-term relevancy; that is, it deals with the structures and processes of literacy, not with aspects of literacy or literacy instruction that may be irrelevant in a few years. Third, while some items do not exemplify the authors' theoretical positions, the material may be especially influential and cannot be ignored. Fourth, the material must be directed at the designated audience. Finally, the material must be relatively easy to obtain.

104
Diabetes Educational Materials for Adults With Limited Reading Skills: Selected Annotations.
National Diabetes Information Clearinghouse.
Bethesda, MD, National Diabetes Information Clearinghouse, 9 p., August 1979.
Available from: National Diabetes Information Clearinghouse, Box NDIC, Bethesda, MD 20205. (381) 468-2162.

The National Diabetes Information Clearinghouse has prepared a bibliography of diabetes educational resources for adults with limited reading skills to help health educators acquire appropriate materlals. By assessing the readability level of pamphlets or scripts for audiovisual materials, health educators can determine the difficulty for their readers and revise materials for better understanding. Readability testing is a technique to determine the approximate grade level required to understand written material. The materials included In this bibliography were evaluated using the SMOG Index. This formula takes approximately 15 minutes per document and has a standard error of prediction of about 1.5 grades. Print materials listed in the bibliography are dassified according to very easy reading and easy to average reading. The bibliography also includes a list of nonprint materials. (HE9000658)

105
Diabetes Educational Materials for Adults With Limited Reading Skills: Supplement.
National Diabetes Information Clearinghouse.
Bethesda, MD, National Dlabetes Information Clearinghouse, 14 p., December 1984.
Available from: National Diabetes information Clearinghouse, Box NDIC, Bethesda, MD 28265. (301) 466-2162.

The National Diabetes Information Clearinghouse (NDIC) produced a supplement to its bibliography of Diabetes Educational Materials for Adults With Limited Reading Skills. The supplement, listing materials developed for people with diabetes, as well as articles and teaching aids of interest to health professionals, contains items added to the NDIC cdlection since 1981. Each citation is comprised of title and author, publisher, a physical description of audiovisual materials (ii appropriate), the producer's address and the price of the item, and a summary or description of the item. The bibliography includes professional resources for print materials, and patient resources and teaching aids for print and nonprlnt materials. The bibliography also includes a list of other sources

for information about materials and aids for people with limited reading skills. (HE9000659)

106
Family Literacy: A Bibliography.
Rudd, A.S.
Momence, IL, Baker and Taylor, 64 p., 1989.
Available from: Baker and Taylor, 501 South Gladidus Street, Momence, IL 60954.

Family Literacy: A Bibliography contains an annotated list of materials divided into four sections: Breaking the Cycle includes information on literacy, workplace and consumer skills, and test preparation; Home Affairs includes information on AIDS, drugs, alcohd, health, and parental concerns; Reading for Pleasure includes information on children's literature award winners, poetry, and biographies; and English as a Second Language includes information on cultural assimilation, literacy skills, and test preparation. Each entry includes resources and bibliographic descriptions and an annotation with suggested reading level fdlowed by ISBN number and price. The bibliography is appropriate for use by organizations and indiviiuals invdved in literacy training and for learners seeking materials for their personal needs and enrichment. Ail materials listed are available from Baker & Taylor Books.

107
Family Literacy: Abstracts of Family Literacy Programs.
US Department of Education, Cffice of Vocational and Adult Education, Division of Adult Education and Literacy.
Washington, DC, US Department of Education, Cffice of Vocational and Adult Education, Division of Adult Education and Literacy, 16 p., March 1990.
Available from: US Department of Education, Cffice of Vocational and Adult Education, Division of Adult Education and Literacy, Washington, DC 20202-7240.

The Division of Adult Education and Literacy of the United States Department of Education published a directory listing and describing Federally and privately funded family literacy projects throughout the United States. The family literacy programs attempt to break the cycle of illiteracy by working with both parent and child. The programs teach parents and their children academic skills and bring them together for learning activities. Parent education skills such as nurturing, communicating, educating, and disciplining are induded In the activities. Program information includes contact, address, and telephone number in addition to program descriptions.

108
First Teachers: A Family Literacy Handbook for Parents, Policymakers, and Literacy Providers.
Barbara Bush Foundation for Family Literacy.
Washington, DC, Barbara Bush Foundation for Family Literacy, 70 p., 1989.
Available from: Barbara Bush Foundation for Family Literacy, 1002 Wisconsin Avenue, NW, Washington, DC 20007. (202) 3362006.

Published by the Barbara Bush Foundation for Family Literacy, First Teachers: A Family Liieracy Handbook for Parents, Pdicymakers, and Literacy Providers focuses on key elements of effective literacy programs, including goals, target populations, outreach techniques, funding sources, support services, materials used, special features, and outcomes. The handbook describes ten specific projects: The Parent and Child Education (PACE) Program; the Kenan Trust Family Literacy Project; the SER Family Learning Centers (FLC's) of SER-Jobs for Progress, Inc.; the Parent Readers Program; MOTHEREAD, Inc.; the Mothers' Reading Program; the Arkansas Home Instruction Program for Preschool Youngsters (HIPPY); the Parents as Partners in Reading; the Parent Leadership Training Project; and the Advance Family Support and Education Program. The handbook also includes a chart summarizing the main points of each program and lists of program contact addresses and additional sources of information and assistance.

109
1990 Directory of United Way-supported Literacy **Efforts.**
United Way of America.
Alexandria, VA, United Way of America, 84 p., 1990.
Available from: United Way of America, 701 North Fairfax Street, Alexandria, VA 223142045.
(703) 836-7100.

in January 1989, the United Way of America conducted a literacy survey by sending questionnaires to United Way organizations throughout the United States. Responses were compiled into the 1990 Directory of United Way-supported Literacy Efforts, which is intended to help United Way organizations network on literacy efforts and to illustrate the scope of United Way invoivement in literacy action. The directory, organized by State, includes the following information for each of approximately 300 United Way organizations: Contact name, address, and telephone number: specific agency and program support offered; nonfinancial support offered; start date for literacy programs; target population for programs, including adults, teens, children, workplace, ESOL, learning disabilities; and program results.

Materials

110
Blacks and High Blood Pressure.
US Department of Health and Human **Services,** Public Health Service, **National** Institutes of Health, **National** Heart, Lung, and Blood Institute, National **High** Blood Pressure Education Program.
Bethesda, MD, US Department of Health **and** Human Services, Public Health Service, National Institutes of Health, National Heart, Lung, and Blood Institute, National High Blood Pressure Education Program, 6 p., November 1682.
Available from: National Heart, Lung, and Blood Institute Education Programs, **Information** Center, 4733 Bethesda Avenue, Suite 530, Bethesda, MD 20814. (301) 9513260.

Blacks and High Blood Pressure, a brochure produced by the National High Blood Pressure Education Program, teaches **low-literate** black adults about high Mood **pressure,** and **its associated risks** of heart attack and stroke. The brochure discusses the prevalence of high blood pressure among blacks, the necessity for treatment, and the **role** of the patient's family in controlling high blood pressure. For patients with high blood pressure, the brochure stresses the importance of having regular **blood** pressure checks, fdlowing physician's advice, and taking medication as instructed. The brochure further advocates preventive measures, such as weight control and limited salt and alcohol intake.

111
Blood Pressure Facts.
Florida Department of Health and **Rehabilitative** Services.
Tallahassee, FL, Florida Department of Health and Rehabilitative Services, 8.5 x 14 inch poster, 1689.
Available from: Florida Department of Health and Rehabilitative Services, **1317 Winewood** Boulevard, Tallahassee, FL **32399-0700.** (904) 488-2834.

Blood Pressure Facts, a poster produced by the Florida Department of Health and **Rehabilitative** Services, teaches low-literacy patients about hypertension and **its** associated **risks** of heart disease and stroke. Specifically, the poster **includes** numerical values of blood pressure readings for **normal,** high-normal, mild, moderate, and severe ranges. The poster also promotes limiting salt intake, increasing exercise, stopping smoking, **losing** weight, reducing alcohol Intake, and stress, and getting regular blood pressure checks.

112
Cholesterol **Facts.**
Florida Department of **Health** and **Rehabilitative** Services.
Tallahassee, FL, **Florida** Department of **Health and** Rehabilitative Services, 8.5 x 14 inch poster, 1987.
Available from: Florida Department of Health and Rehabilltatlve Services, 1317 **Winewood** Boulevard, Tallahassee, FL **32399-0700.** (804) 488-2834.

Chdesterd Facts, a poster developed by the **Florida** Department of Health and Rehabilitatlve **Services,** teaches low-literacy patients about the prevention and treatment of high blood chdesterd and **its** associated risks of coronary heart disease and stroke. **Specifically,** the poster provides basic information about the origins and risks of chdesterd, and recommends nutritional steps to control cholesterol intake, such as avoiding **fried** foods, fatty red meats, and sandwich meats, eating more **fish,** beans, fruits, and vegetables, and using margarine **and liquid** vegetable oils. The poster also promotes learning the facts about cholesterol, visiting a doctor on a regular basis, and controlling other risk factors, such as high blood pressure, smoking, and obeslty.

113
Good Health: **It's Your** Decision. **Buena Salud: Esta En Sus Manos. Leader's Guide and Flip Chart.**
Texas Department of Health, Public Health Promotion Division, Health Education/Risk Reduction Program.
Austin, TX, Texas Department of Health, Public Health Promotion Division, Health Education/Risk Reduction Program, 31 **p.,** May 1986.
Available from: Texas Department of Health, Public Health Promotion Division, Health Education/Risk Reduction Program, 1100 West 49th Street, Austin, TX 78786.

The Good **Health:** It's Your Decision Leader's Guide and Flip Chart teaches disease prevention and health risk reduction to low income, low literacy **clients** in **public** health clinics. The chart, **printed** in both

English and Spanish, addresses those risks which are the most prevalent in this population. The topics covered include disease prevention, high blood pressure, diabetes, obesity, exercise, and cigarette smoking. The guide is designed to be used by health professionals. (CV0006703)

114

Low Literacy Materials.

US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung, and Blood Institute, Cffice of Prevention, Education, and Control.

Bethesda, MD, US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung, and Blood Institute, Cffice of Prevention, Education, and Control, February 1989.

Available from: National Institutes of Health, National Heart, Lung, and Blood Institute, Education Programs Information Center, 4733 Bethesda Avenue, Suite 530, Bethesda, MD 20814. (301) 951-3260.

Low Literacy Materials, an information packet designed by the National Heart, Lung, and Blood Institute of Cffice of Prevention, Education, and Contrd, contains materials developed as a result of the workshop Extending the Reach of Health Agencies: A Challenge for Reaching Lower Reading Level Audiences. The purpose of the workshop was to raise awareness about low level or absent reading skills and to consider ways to address literacy problems with creative solutions. Workshop content included facts on low literacy, a low literacy audience participation exercise, a case study, discussions on the interpersonal perspective, information on problems and approaches in communicating effectively, lectures on problems, and approaches in program development. The packet includes a summary of the discussions from the sessions with recommendations for action; a description of the programs; and samples of some of the materials which are reported to be quite effective in use. The slides are reduced photocopies of 9 posters used by Arizona and New Mexico in their respective AIDS campaigns. Posters have been found to be the best method of reaching those with low or absent reading skills because they convey a simple message without being condescending.

115

Survival.

South Dakota United Indian Association.

Pierre, SD, South Dakota United Indian Association.

Available from: National Heart, Lung, and Blood Institute Education Programs, Information Center, 4733 Bethesda Avenue, Suite 530, Bethesda, MD 20814. (301) 951-3260.

Funded by: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Heart, Lung, and Blood Institute, National High Blood Pressure Education Program.

Survival is a brief brochure developed to teach adults in California Indian tribes who have limited reading ability about high blood pressure and its associated risks of heart attack, kidney failure, and stroke. Through simple illustrations and termindogy, the pamphlet emphasizes that high blood pressure usually has no symptoms and advocates regular blood pressure checks by a doctor or nurse. It also stresses the importance of following physicians' advice about diet and nutrition.

116

Time of Change. De Nina a Mujer.

US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute.

Bethesda, MD, US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute, 68 p., January 1988.

Available from: US Department of Health and Human Services, Public Health Service, National Institutes of Health, National Cancer Institute, Cffice of Cancer Communications, Building 31, Room 1 0A16, Rockville, MD 20892, (800) 4-CANCER.

A Time of Change/De Nina a Mujer is a photonovella designed to educate young Hispanic women with limited reading ability about various health issues. The booklet promotes a variety and balance of foods, regular exercise, monthly breast self examinations, regular pelvic examinations, and Pap tests. It discourages smoking, alcohol use, and other drug use. Written in both Spanish and English, the booklet depicts conversations between Rosa and her aunt, boyfriend, and doctor about the health issues listed above. Following Rosa's story, the booklet provides a listing of organizations that offer health information, a

d&gram of a breast self examination, and a detailed list of suggestions **for losing weight and increasing exercise.**

117
You and Your Medicines: Let's Talk.
National Council on Patient information and Education.
Talk About Prescriptions Month. October 1989.
Available from: National Council on Patient information and Education, 666 1 lth **Street, NW.,** Suite 810, Washington, DC 20001.

Specially designed for adults with poor reading skills, You and Your Medicines: Let's Talk, a poster designed by the National Council on Patient information and Education, provides information on prescription medicine. The poster is for distribution in pharmacies, physicians' offices, nursing stations, managed care groups, and hospital education and discharge planning programs. Health care providers are asked to give posters to ail patients at the time they receive their prescriptions. Specifically, the poster encourages patients to ask health care providers about mixing drugs with certain foods and aicohoi, and about appropriate drug dosages. it also suggests that patients call with questions or problems about drugs and get their prescriptions filled promptly.

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