Appalachian Rural Health Institute
ARHI

COMMUNITY HEALTH ASSESSMENT

Health Literacy

Sharon A. Denham, DSN, RN & Ann Rathbun, Ph.D., CHES
Ohio University, College of Health and Human Services
January 2005

OVERVIEW

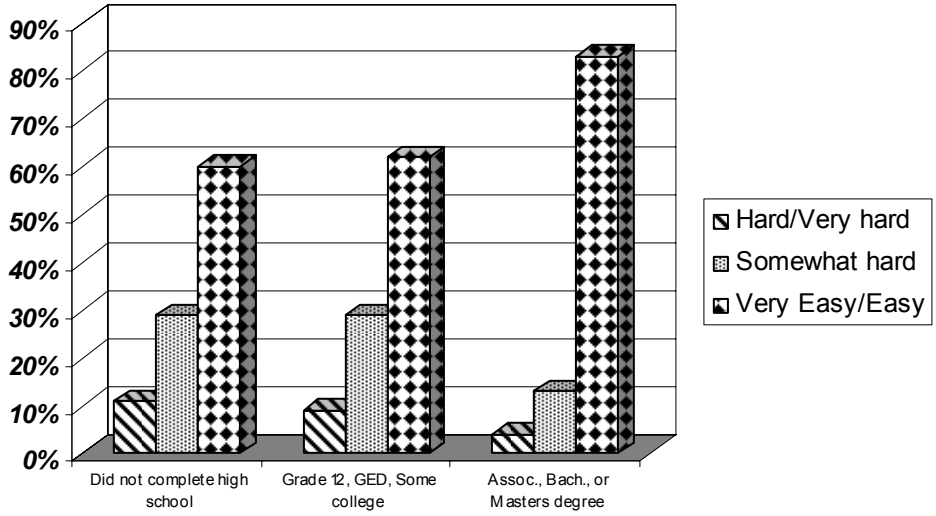
This community assessment was part of the Appalachian Rural Health Institute (AHRI) outreach project funded through a federal appropriation that was sponsored by Congressman Ted Strickland and a Rural Health Initiative grant from the Appalachian Regional Commission. The assessment was conducted in Athens, Hocking, Pike, and Vinton Counties in Ohio from September 2003 through June 2004. The community assessment addressed access to health care services, access to health care information, perceptions of diabetes care, and health literacy concerns. The primary purpose of the cross-sectional study was to learn more about local persons' perceptions related to health care services and health education needs.

PERCEPTIONS ABOUT HEALTH INFORMATION

Participants' perceptions about health information indicated that although 68% of the participants thought information was "easy" to read and understand, 24% thought it was "somewhat hard," and 8% reported it was "very hard." While few of those with college degrees (4%) reported difficulty reading or understanding health information, 9% of those with a high school education, and 11% of those who had not completed high school found these activities either "hard" or "very hard" (Figure 1). However, it is interesting to note that 29% of those with a high school education, about the same number of those without a high school education, and 15% of those with a college education found it "somewhat hard" to read and understand health information. Of the total participants (n = 383) that identified their level of education, 32.4%

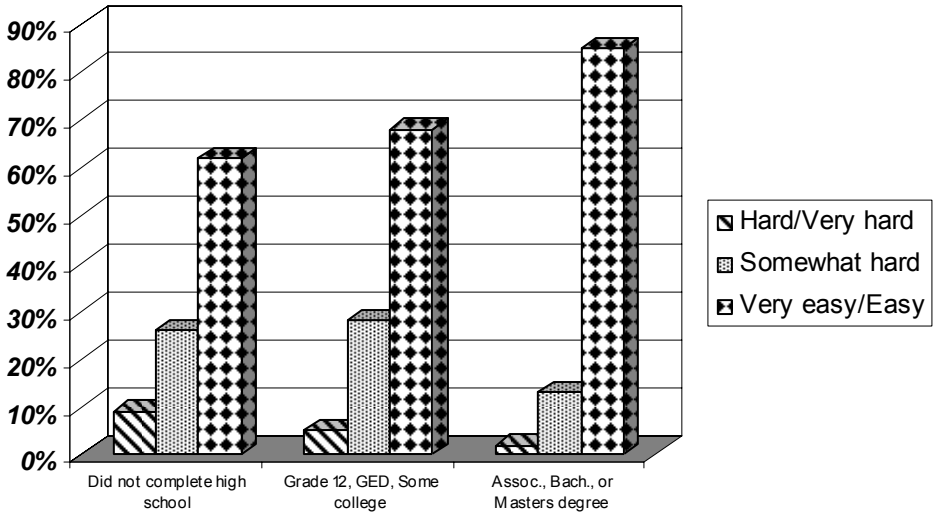
reported that reading and understanding health information was “somewhat hard,” “hard,” or “very hard.” Thus, it appears that literacy level related to health information may be a concern for many persons residing in the four counties.

Figure 1: Education and difficulty reading and understanding health information



When asked about ease in understanding health information from TV, radio, or newspaper, 22% of all participants thought the information was “somewhat hard” to understand with another 5% thought it was “hard” or “very hard” to understand. It was expected that level of education would have an effect? on ease of understanding health information obtained from TV, radio, or the newspaper. Participants with high school education (28%) reported that it is “somewhat hard” to understand this health information while only slightly fewer (26%) of those without high school education reported it being “somewhat hard” (Figure 2).

Figure 2: Education and ease of understanding health information in the media



COMPARISON of HEALTH MATERIALS

An activity included in the survey was the showing of two different brochures related to tobacco use and asking participants to identify which brochure they preferred. One brochure was entitled "Living Smoke-Free: For You and Your Baby," a brochure from the American Cancer Society and the other was entitled "A Woman Who Smokes Talks about Tobacco Smoke," a brochure created for use with an Appalachian population. The brochure is one of a series of culturally specific print materials created through research to assist Appalachian mothers talk to their children about tobacco use (Denham, Meyer, Toborg, & Mande, 2004). Both brochures were reviewed for literacy levels prior to the study using the SMOG criteria. The American Cancer Society brochure is at a 9th grade reading level and the Toborg brochure is written at a 4th grade level.

Study participants were asked to select the brochure they preferred. Of the persons (n = 368) answering the question, 59.5% selected the "A" American Cancer Society brochure as preferred and 40.5% selected the "B" Toborg Associates, Inc. brochure. Of those selecting the "A" brochure, 71.6% were female, while those selecting the "B" brochure were 75.2% female. While those 18 to 34 years and those 65+ years greatly favored the "A" brochure, only 50.8% of those in the 35 to 64 age group preferred it. When counties of data collection were compared, more than 55% of the participants in all four counties preferred the "A" brochure.

After the participants selected the brochure they favored, they were questioned as to the reasons they preferred the brochure that they selected. Those choosing the American Cancer Society (ACS) brochure, they said they liked the colors and pictures of the brochure (n = 42) and another 16 persons said it looked better. A group of the participants (n = 35) said they liked the message about quitting smoking. Other reasons for selecting this brochure mentioned were things like: easy to read (n = 23), provided more or better information (n = 35), stresses baby's health (n = 21), viewed as more positive (n = 8), format clearer (n = 6), personal appeal (n = 8), and subject matter (n = 5). Some other comments written by participants included: "Explains more clearly about what smoking does to a persons health," "Just liked it better," and "minorities depicted." One participant wrote, "I liked them both, but I feel that it is more important for women not to smoke at all instead of just smoking outside the home." Participants responded to the photos, content, and message.

Those preferring the Toborg Associate, Inc. brochure said they liked the colors and pictures of the brochure (n = 31). A number of participants responded positively to the brochure's message that even if you use tobacco, you can still have a smoke free home by not smoking in it (n = 34) and others (n = 16) said something about the mention of affects of second-hand smoke. A total of 15 participants thought this brochure was easier to read or less "preachy" than its ACS counterpart, 14 persons thought it provided a personal message, 8 persons liked the brochure's format, and 12 persons liked the factual information. Other participant comments included: "I agree that your car, home, etc can be smoke free even if you do smoke," "Son has asthma but our home is smoke free even though his father smokes," "Reminds me of when I was a kid and my parents smoked in the car and I hated it," and "The worst way to start with someone who smokes is with the word quit."

Findings from this activity suggested that both brochures were viewed positively by most participants and people easily responded to reasons they preferred particular materials. More needs to be known about what is actually learned when people view print materials. Additional research in this area using experimental designs could be used to investigate readability of materials by diverse population groups and test levels of learning. Qualitative studies that examined health literacy and appropriate content for print materials could be helpful in designing educational materials for use with Appalachian families.

HEALTH EDUCATION MATERIALS

Brochures and print media for use with persons with diabetes were collected from a variety of health care locations during winter of 2004. Materials were first analyzed by county with grade level ascertained for each piece of print material. The reading level of the health education materials collected and analyzed from the four counties ranged from 5th to 19th grade level based upon the SMOG Grading Formula (McLaughlin, 1969); the average level for all materials was 10.9 grade level. Diabetes materials obtained in Athens County had a reading level of 11.1 grade level, those from Hocking was 11.4, Pike was 10.9, and Vinton County materials had a 10.0 reading grade level.

The materials were then reorganized into six categories for additional analysis. Health education materials were sorted into the following categories: special concerns for people with diabetes, diabetes medicine and insulin, general diabetes information, nutrition, exercise, and a miscellaneous category. Diabetes complications, foot care, neuropathy, eye care, heart disease, and stroke were included in the 'special concerns' category. The 'general diabetes information' category included topics such as managing and controlling diabetes, types of diabetes, lowering your risk, and insulin resistant syndrome. The 'nutrition' and 'exercise' categories included general information. The 'miscellaneous' category included three items (i.e., health insurance, children with medical handicaps, what to do if your child needs a specialist). An average grade level was then calculated for each category of health education materials, scores ranged from 9.8 to 12.19 grade level (Table 1).

Table 1
Average Reading Level of Materials by Topic

Topic/Category	Average Grade Level
Special Concerns for those With Diabetes	9.8
Medicine & Insulin for those With Diabetes	10.4
General Diabetes Information	11.19
Nutrition	10.52
Exercise	10.33
Miscellaneous	12.19

All of the collected health education materials were then summarized to identify the author or distributor source of the information, number of pieces of the information, a median grade level score for the materials, and the counties where materials were being used (Table 2). The majority of health education information being given to patients with diabetes in all four counties were mainly materials provided by pharmaceutical companies (n = 24). These materials had a SMOG

of 10.6 grade level and materials developed by the American Academy of Family Physicians (n = 13) had an average 13th grade reading level. Two brochures from the American Diabetes Association had a SMOG reading of 10.5 grade level. None of the materials collected were specifically created for the population for which they were being used.

Table 2
Use of Health Education Materials by County

Author/Distributor of Health Education Materials	Number of pieces	Average Grade Level	Counties where material is distributed
AstraZeneca	4	15	Athens, Pike
Bristol Myers Squibb	2	11	Athens
American Academy of Family Physicians	13	10.9	Athens, Pike
Lilly	4	10	Hocking, Pike
Merck	2	9.5	Hocking, Pike, Vinton
Bayer	1	9	Pike
Novo Nordisk	7	10.7	Athens, Hocking, Vinton
American Diabetes Association	2	10.5	Athens, Pike, Vinton
Journeyworks	2	9.5	Vinton
Department of Dietetics (location not listed)	1	9	Pike
GlaxoSmithKline	2	7.5	Hocking, Vinton
American Heart Association	1	13	Vinton
Hocking Co. Health Department	1	12	Hocking
Ohio Department of Health (BCMH)	1	18	Hocking
Upjohn	1	12	Hocking
Patient Care (journal)	1	8	Athens
Miles Pharmaceutical Division	1	11	Athens
Caremark Health Education	1	14	Athens
No author listed	1	10	Vinton

CONCLUSIONS

Access to useful health information is of concern to many county residents. The reporting of low literacy levels is common by health care providers, but little is known about what is actually being done by providers within health care settings to address additional concerns associated with health literacy. The collection and analysis of diabetic health education materials from multiple health care provider settings throughout the four counties demonstrated that the average reading level of these materials was at the 10.9 reading level, certainly higher than the national reading level average of 8th grade. Perceptions of communication problems with medical care providers exist in all counties and consumers often lack the skills and resources needed for obtaining needed health care information. Residents have unique needs and interests related to access of health care information that do not appear to be adequately addressed. Additional research and intervention projects aimed at specific Appalachian populations related to health concerns and literacy needs could be an important next step in rural southeast Ohio.