

5-Year Followup of the Effect on Optometrists of Continuing Education about Hypertension

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Synopsis

All 319 participants of an intensive continuing education course on optometric hypertension

screening at the University of Alabama at Birmingham were surveyed 5 years after completion of the course. Almost 85 percent of 211 responding optometrists reported that they were continuing to screen for hypertension in their practices. They estimated that 24 percent of their patients had hypertension and that of these 11 percent were previously undetected.

The criteria used by these optometrists for tentative diagnosis and referral were consistent with currently accepted guidelines. Hypertension screening by optometrists is cost-effective, and this survey suggests that continuing education courses providing intensive didactic and clinical instruction may be an effective method for changing clinicians' behavior. For most optometrists who participated in this continuing education program, the program appears to have positively changed their clinical behavior.

AS PRIMARY CARE PROVIDERS, OPTOMETRISTS are a valuable resource for the early detection of systemic hypertension. The distribution, accessibility, and use of optometric care allow the detection and treatment of many people who have systemic hypertension and other diseases that might otherwise remain untreated. Hypertension is of considerable importance because of its high prevalence, ocular manifestations, and potential for increasing the morbidity and mortality among those affected. Measurement of blood pressure is a simple, noninvasive method of screening for hypertension and is highly effective in the early detection of hypertension when treatment can minimize irreversible damage to body organs.

The University of Alabama in Birmingham (UAB) School of Optometry was one of the first optometry schools to include both formal instruction and clinical training in systemic hypertension, emphasizing its detection and management. This training was started for students in the early 1970s. Between 1974 and 1975 the UAB School of Optometry provided a series of continuing education programs on hypertension and its detection for practicing optometrists from the southeastern United States. The initial results of this program

were favorable and have been published (1). Following the lead of the School of Optometry, the American Optometric Association in 1975 adopted a resolution encouraging all optometrists to measure blood pressure and to use the measurement and referral standards recommended by the National Heart, Lung, and Blood Institute Advisory Council.

Uncontrolled hypertension is a major public health problem in the United States. It is a chronic asymptomatic disease that affects an estimated 60 million Americans or approximately 28 percent of the adult population (2). More than half of these people are either unaware of their condition or do not consider it serious enough to seek or maintain treatment. Affected individuals have a very high risk of developing heart attacks, strokes, kidney diseases, and, possibly, blindness. Hypertension is the primary cause of more than 60,000 deaths per year and a major contributing factor to the 1.5 million heart attacks and strokes that occur each year (3). Once detected, hypertension can usually be controlled. This control is critical to preventing premature disability and death.

Approximately 20,000 active optometrists are currently located in about 75 percent of all counties in the United States (4). Optometrists are the only

health care providers present in many urban and rural areas. This widespread geographic distribution and their professional training make optometrists a major resource for the detection of hypertension. They are also a major resource because of the substantial portion of the population with vision and eye disorders that require optometric care and management.

A major criticism of continuing education has been the paucity of systematic evaluations that demonstrate the value or effectiveness of continuing education programs. A recent conference on continuing medical education (CME) reported that ". . . there is little evidence to support the contention that formal CME course-work either increases a physician's knowledge base, or, more importantly, improves his performance. In fact, except for a few noteworthy cases, there has been almost no rigorous evaluation of the structure, technique or results of continuing medical education programs" (5). Measures of the effectiveness of continuing education programs have included attendance, satisfaction, knowledge, skill, behavior, and patient health status. One major weakness of all of the studies using these measures has been the lack of long-term followup (6,7).

The major purpose of our investigation was to conduct a 5-year followup survey of the participants in the continuing education program conducted for optometrists during 1974-75 and to evaluate its effectiveness in modifying the subjectively reported clinical behavior of these practicing optometrists.

Methods

A 2-day continuing education program for practicing optometrists in the southeastern United States was sponsored by the University of Alabama in Birmingham School of Optometry and the Alabama Regional Medical Program. This program was conducted nine times between 1974 and 1975. The program was designed to (a) upgrade the optometrists' knowledge and clinical skills and to increase their effectiveness in screening for hypertension, (b) charge these practitioners with the responsibility for screening for hypertension, and (c) demonstrate that optometrists can be an effective resource in hypertension detection.

A total of 319 optometrists attended the course, and 245 responded to a 6-month followup questionnaire. Respondents were all private practitioners ranging in age from 27 to 82 years and represented 8 southern States (1). More than 70 percent of the participants were from communities with popula-

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tions under 50,000, and 55 percent were from communities with populations under 25,000.

Each optometrist received 13 hours of lecture and 5½ hours of clinical training that included epidemiology, physiology, and signs and symptoms of hypertension and related diseases; clinical measurement of blood pressure and the detection and classification of hypertension; and clinical patient demonstrations of different stages of hypertension. Each optometrist was tested clinically to verify his or her ability to measure blood pressure correctly. The program was conducted by two internists, one ophthalmologist, and eight optometrists from the UAB faculty.

Upon completion of the course, each optometrist was instructed to complete a reporting form on 100 consecutive patients age 20 years or older examined in his or her private practice. Patients were provided with the usual informed consent forms for screening. Of the 245 respondents, more than 90 percent had screened 100 consecutive patients as instructed.

The major result of a 6-month followup survey was that 94 percent of the respondents had significantly changed their mode of practice by routinely screening for hypertension. In addition, 3 percent stated that they had previously measured blood pressure routinely and added that the program had not improved their skills. Only 3 percent reported little or no change in their mode of practice (1).

The 5-year followup survey being reported in this paper used a questionnaire that was designed, pre-tested, and mailed in 1982 to the 319 optometrists who had attended the program. Graduates of the School of Optometry in Birmingham were not included in the study because they had received didactic and clinical instruction in hypertension screening and management while in optometry school. The questionnaire was divided into two parts, one for demographic information and the other for practice and screening information. The demographic information requested included age, sex, school attended, year of graduation, hours per

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week in practice, number of patient visits per week, and age, race, and sex of the patients. The screening information requested included referral criteria and management practices.

Results

There were 211 completed questionnaires—a response rate of 66 percent. The mean age of the responding optometrists was 50 years, and all were licensed to practice in the southeastern United States. Approximately 60 percent had graduated from the Southern College of Optometry, and the total group had been in practice an average of 23 years.

About two-thirds of the optometrists were in solo private practice, and the remaining one-third were in group private practices. Nearly 70 percent were in communities under 100,000, and 40 percent were in communities under 25,000. The typical optometrist practiced 40.04 hours per week and averaged 82 patient visits per week.

The majority of the optometrists' patients were females. About 25 percent of the optometrists' patients were nonwhite, and almost 55 percent of the patients were older than 40 years.

Eighty-four percent of the respondents reported routinely screening for hypertension in their practice. Blood pressure was measured on more than half of the optometrists' patients, taking an average of 3 minutes per patient. Patient age, significant case history, symptoms, and race were the factors judged most important in the optometrists' decision to measure blood pressure.

When uncontrolled high blood pressure was detected, 58 percent of the optometrists recommended that a physician be consulted, and 41 percent actually made appointments for their patients to see a physician. Patients were referred to physicians in family practice, general practice, and internal medi-

cine. Patients referred to these physicians for further care were monitored by 44 percent of the optometrists. About 9 percent of the optometrists charged a separate fee for sphygmomanometry.

The questionnaire asked optometrists to estimate the proportion of their patients with suspected, controlled, or uncontrolled hypertension. An average of 24 percent of these optometrists' patients were estimated to be hypertensive, and 11 percent of this group were first detected during an optometric examination. It was estimated that 15 percent of the hypertensive patients either refused or did not seek treatment.

A stepwise regression analysis was performed to determine if any characteristics of optometrists or their practices were associated with hypertension screening. The four variables found to be significantly associated with hypertension screening ($P < 0.05$) were optometrists who practiced in a small city who had patients over age 40, patients who were nonwhite, and patients with low family incomes.

Discussion

There are several unique characteristics of this particular continuing education program and of optometrists in general that contribute to the importance of our study. First, few practicing optometrists received instruction in blood pressure measurement prior to the UAB continuing education program. In the 6-month followup, only 3 percent of the respondents reported measuring blood pressures routinely prior to the UAB program. As previously stated, most optometry schools did not begin formal training for hypertension screening until the mid-1970s. Therefore it is unlikely that the participants in this program received any clinical training in blood pressure measurement while in optometry school or after graduation.

The second important feature of this study is the long followup period. The few long-term studies in the continuing education literature have usually had followup assessments 1 year after the conclusion of continuing education programs. Our study is one of the first studies indicating positive long-term effects of continuing education on practitioner-reported clinical behavior. The 5-year interval may have resulted in more accurate reporting by the optometrists, because any short-term bias associated with the enthusiasm of the instructors or novelty of the technique would presumably be minimal.

Almost 85 percent of the respondents reported screening for hypertension 5 years after participat-

ing in the intensive UAB continuing education program. The results of a survey performed 6 months after the completion of the program indicated that 94 percent of the respondents were screening for hypertension. However, these results may not reflect accurately the effect of the course because of self-selection in the 66 percent response rate. Assuming that all nonrespondents were not screening for hypertension, about 56 percent of the original participants would still be screening 5 years after completion of the continuing education program. If all nonrespondents were screening for hypertension, about 90 percent of the original group would be screening.

The percentage of respondents who screened for hypertension is substantially higher than that reported in two other national optometric surveys (8,9). In the first survey 45 percent of the optometrists reported doing sphygmomanometry, and 12 percent planned to add it at a later time. The second survey indicated 56 percent of the optometrists reported that they measure blood pressure. For comparison, a 1979 National Ambulatory Medical Care survey indicated that ophthalmologists measure blood pressure during only 0.5 percent of all patient visits (9).

The prevalence of hypertension has been estimated to be about 28 percent of the adult population, and more than half of those affected are either undiagnosed or untreated. The results of this study suggest that the estimated prevalence of hypertension in optometric patients is approximately the same as that of the national prevalence. For any individual practice the prevalence may, of course, be higher or lower.

The research design used in our investigation was a one group pretest-posttest design with an additional followup survey performed 5 years after the completion of the course. The 6-month followup survey sought information regarding the optometrist's hypertension screening practices prior to completing the UAB continuing education program. This information served as a "retrospective pretest" and has already been discussed elsewhere (1). As is often true with many "real world" investigations, the current study design was chosen because of monetary, time, and manpower constraints.

The limitations of this study design have been well-described (6) and include the absence of a comparison or control group, the attrition of respondents, and the use of self-reporting of clinical behavior. However, in this unique case in which the optometrists did not receive any didactic training in hypertension during their formal education and

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when no such programs were offered in the intervening years to optometrists, it appears that this group is a relatively good self-control group. If we use a worst case approach and assume that no nonrespondents screened for hypertension in spite of their having similar characteristics to the group responding, then more than 55 percent of the original group of optometrists would still be screening for hypertension 5 years after the completion of the program.

Inherent in this study, as with other evaluation studies, is the problem of self-selection. Optometrists attending courses do elect to give up time from their practices in order to be exposed to certain information. This circumstance may imply that they are more highly motivated than the average practitioner. Although the 319 participating optometrists did not constitute a true random sample in that they were self-selected, the 211 respondents had characteristics similar to both the nonrespondents and the national profile of optometrists in terms of age and years in practice.

We believe that this continuing education program was responsible for changing these clinicians' practice behavior. Until the 1970s optometry schools did not include hypertension screening and management in their curriculum. Only 3 percent of the respondents routinely measured blood pressure prior to this continuing education course. Additional continuing education courses taken between the completion of the UAB course and this survey may have reinforced or maintained the skills learned earlier. However, only 29 percent of the optometrists did report attending other continuing education courses on hypertension screening after 1975. In the optometric literature only three articles were specifically related to the technique of sphygmomanometry, and only one of them was published before 1975. Therefore, it appears that other continuing education programs and articles in the professional literature would have had a minimal effect

at most prior to initiation of the UAB continuing education program in 1974-75.

Conclusion

The UAB continuing education program appears to have been successful in modifying the clinical behavior of the optometrist participants. Optometric hypertension screening is highly cost-effective, and the UAB course provided "hands-on" instruction that may be an effective method for use in future continuing education programs.

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Placement of Health Promotion Columns in Suburban Newspapers—An Analysis

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Synopsis

In the fall of 1982, the Office of Disease Prevention and Health Promotion, Public Health Service, engaged the services of the North American Precis Syndicate, Inc., to distribute two columns on health

promotion to suburban newspapers. An analysis of the placement of these two health promotion columns in local newspapers was undertaken to determine if this method of disseminating health information to the public is effective and cost-conscious. The information gained from this analysis, though limited in scope, provides information to decision makers responsible for disseminating health information to the public.

North American Precis Syndicate, Inc. (NAPS), distributes public information through various channels. One service NAPS provides is a clip sheet of publication-ready newspaper columns complete with artwork which an editor can "clip" and use directly in a newspaper. NAPS is able to use existing information and artwork to develop its columns, so agency staff time is minimal in developing material. NAPS also provides clippings of the articles as they actually appear in the 3,800 suburban newspapers it services. It is the information from the NAPS "clipping service" on which this report is based.

IN THE FALL OF 1982, the Office of Disease Prevention and Health Promotion distributed, through the North American Precis Syndicate, Inc. (NAPS), two columns to local newspaper editors throughout

the country. These brief messages were designed to remind the public of good health habits and to reinforce the idea that these actions lead to better health. A sample is illustrated in fig. 1.