Health Promotion Practices in Two Chiropractic Teaching Clinics
Does a Review of Patient Files Reflect Advice on Health Promotion?

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Purpose: To retrospectively review patient files in two teaching clinics in the United States and to assess the documented attempts to deliver health promotion messages when a chart indicated a need for health promotion or a red-flag condition that could be helped with positive behavioral changes. **Methods:** Approximately 100 patient files were randomly selected from each of two separate chiropractic teaching clinics, for patients seen after January 2007. Files were assessed for pertinent family history of diseases, personal medical history, and red-flag conditions of patients that would warrant intervention with health promotion. **Results:** Health promotion advice on at least one occasion was noted in 108 (53.7%) patient charts. Only 7 of 98 overweight or obese patients and none of those with family history of obesity were advised on weight management. Among 23 hypertensive patients, only 5 were advised and 17 of the 97 patients with risk of cardiovascular disease were advised. **Conclusion:** Chiropractic teaching clinics should assess what they are doing to help Americans reach their health goals. There is an opportunity to shape future practitioners so they include primary prevention as a part of what they do if the profession cares to move in that direction. Future research should look at mechanisms of delivery for health promotion, including better tracking of patients who need it and how staff doctors are trained to deliver oversight to interns in the area of primary prevention. (J Chiropr Educ 2010;24(2):159–164)

Key Indexing Terms: Cardiovascular System; Chiropractic; Health Promotion; Hypertension; Obesity

INTRODUCTION

The United States Government, the Institute of Medicine, and other entities have called on health care providers to help patients set and reach goals regarding the prevention of premature onset of morbidity and mortality.[1,2] In addition, the American Chiropractic Association and the Association of Chiropractic Colleges both have endorsed the use of health promotion and wellness measures in their position statements and mission paradigms.[3,4] In 2007 the Council on Chiropractic Education (CCE) issued new standards that set benchmarks in the area of wellness, health promotion, and delivery of preventive medicine education for all students in the nation's chiropractic colleges.[5] Those standards call for didactic information to change knowledge, attitudes, and beliefs of interns regarding health promotion practices as well as require demonstration of skills in the assessment and delivery of information and resources to patients. In general, poor health conditions have also been associated with patients who suffer from chronic spinal problems.[6–8]

The National Board of Chiropractic Examiners since 2005 has reported that doctors of chiropractic

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(DC) perform a variety of health promotion-oriented tasks as part of routine practice, but those vary in scope depending on the specific area of health promotion.[9] For example, a vast majority of DCs recommend general exercise, but far fewer discuss smoking cessation or safe sexual practices with their patients.[9,10] Hawk and Evans assessed smoking cessation advice provided to patients in nine teaching clinics and found about 40% of patients had been told to quit smoking but fewer had been given specific information on how to be successful.[11] One study asked graduating interns at a chiropractic teaching clinic about their intention to perform health promotion measures in practice and specifically asked about a number of health promotion behaviors. While a majority of interns (>85%) said they planned on using health promotion in practice, once again, interns were more likely to say they would counsel "all" patients on exercise, for example, rather than on stress or tobacco use.[12]

Ndetan and colleagues looked at the National Health Interview Survey (NHIS) data and found that patients who reported seeing a DC as the only health care provider within the past 12 months were more likely to report being physically active and less obese but no more or less likely to smoke or use alcohol than those having only seen a physician within the past 12 months.[13] The purpose of this study was to retrospectively review patient files in two teaching clinics in the United States and assess the documented attempts to deliver health promotion messages when a chart indicated a need for health promotion or a red-flag condition that could be helped with positive behavioral changes.

METHODS

File Selection

After institutional review boards at both colleges approved the study, a random selection of approximately 100 patient files was made from each of two separate teaching clinics using random number generation. Numbers were generated based on the individual numbering systems used at each clinic beginning with numbers of patient charts seen after January 2007 when the new CCE standards on wellness and health promotion went into effect. If a file could not be located, the next number generated was selected.

Conditions Reviewed

The patient files were assessed for pertinent family history of diseases that would indicate a condition that may warrant intervention with health promotion, such as cardiovascular disease (CVD), diabetes, cancer, and so on; personal medical history of the patient; and conditions that would indicate a red-flag, such as history of stroke, CVD, diabetes, current hypertension, and high body mass index (BMI). BMI was calculated from the height and weight of the patient stated in the chart, using the typical formula [(weight)/(height)^2] * 703 with the weight in pounds and the height in inches. From the conversion above, obesity was defined as a BMI $\geq$30 kg/m^2. Data were placed in a SPSS database (version 17.0, Chicago, Illinois) and analyzed for basic descriptive frequencies, binary and multiple logistic regression, and chi-square analysis.

RESULTS

There were a total of 201 files selected for review: campus 1 ($n = 118$, 59%) and campus 2 ($n = 83$, 41%). For patients in the sample, the mean systolic blood pressure (SBP) was 121.7 $\pm$ 11.2 mm Hg, the mean diastolic blood pressure (DBP) was 76.7 $\pm$ 8.7 mm Hg, and the mean BMI was 26.8 $\pm$ 5.7 kg/m^2.

Overall Health Promotion Advice and BMI

Health promotion advice on at least one occasion was noted in the patient chart of 53.7% ($n = 108$) of the sample: 26 (within grouping 22%) at campus 1 and 82 (within grouping 99%) at campus 2. This difference based on campus was significant ($p <$ .001). BMI was assessable in 168 patients from available height and weight information in the charts. Of those, 70 (41%) were normal, 60 (36%) were overweight (OW), and 38 (23%) were obese (OB). Ninety-eight (58%) were either OW or OB. Of those either OW or OB, 42 received advice on diet and nutrition and 33 got advice on physical activity (PA). When comparing those who were OW or OB with those of normal BMI, neither was more likely to receive advice [OR = 1.1, (CI 0.6–2.1)]. Only seven received any advice on "weight management." Among those stating a family history of obesity, none received any advice on weight management.

History of Lower Back Pain and Advice

Within the sample, 70 reported lower back pain. Sixty-five of 70 had information in the chart to allow BMI calculation and 42 (65%) were OW or OB. Of the 70, only 14 (20%) received advice on PA. Within the sample who were OW or OB, 10 of the 42 (24%) were advised on PA, and four (<1%) were advised on weight management.

Hypertension, Diabetes, and Advice

Based on vital signs using SBP >120 and DBP >80, there were 23 patients who were hypertensive (HTN). Campus 1 had 12 and campus 2 had 11. Of those, five (21.7%) received health promotion advice. Another 11 had red-flag risk factors related to HTN, such as a personal medical history of HTN and a BP reading >120/80. Five (45.5%) of them got health promotion advice that would potentially address this. Of those with a history of HTN but not HTN at the time, 5/14 (42.9%) got advice. Seven patients had a history of diabetes and of those, four were given advice on diet or nutrition.

Family History and Advice

Sixty-seven had a family history of heart disease noted in the chart, which is a risk factor for heart disease. Of those, 12 (18%) received health promotion advice. Among patients showing a family history of diabetes in the chart, 26/46 (57%) were advised on diet and nutrition.

Combined Risk for Cardiovascular Disease and Advice

When risks of heart disease, hypertension, diabetes, and current OW or OB were combined to form a risk category for general CVD, 97 were determined to be at risk (campus 1 = 43, campus 2 = 54). Among them 17 (17.5%) received advice on health promotion. Seventeen of the 18 receiving any advice on CVD were in the risk category [OR = 21.9 (CI 2.9–168.0)]. In general, those with increased CVD risk ($n = 97$) were more likely to receive some advice on health promotion when compared to those without CVD risk [OR 2.2 (CI 1.3–3.9)].

Other Results

While the assessment was aimed at those red-flag indications and potential causes of premature morbidity and mortality, other items were noted in the retrospective analyses that were of interest. For example, only 26/201 (13%) were advised at all on posture. Among patients having a family history of cancer, 24/64 (37.5%) received advice on cancer prevention. In fact, of the 42 who received any information on cancer prevention, 24 had listed it in their family history.

Three patients had a history of bone demineralization within their intake papers and none of them received any health-promoting advice. Among 15 with a history of arthritis and one with a family history, none was advised on anything related to health promotion. Forty checked a box indicating they suffered from "poor conditioning" on the intake paperwork and yet none of them received any advice on health promotion.

In an attempt to look at the issue of comorbidity of back pain and CVD risk or OW/OB, it was noted that among the 70 with a history of lower back problems, 42 also had CVD risks. This association was not significant [OR = 1.2 (CI 0.6–2.4)]. When heterogeneity of effect was assessed, it became slightly significant at campus 2 [OR = 3.6 (CI 1.0–13.7)] but not at campus 1 [OR = 1.6 (CI 0.5–4.5)]. Among those with lower back problems and OW/OB 42/65 were both and this difference was not statistically significant.

DISCUSSION

As has been stated, national goals exist that call on health care providers of all types to engage patients on the preventable causes of disease.[1,2] Chronic spine conditions are also highly comorbid with other causes of early morbidity and mortality.[6–8] Although the CCE and various trade groups call for DCs to perform health promotion as part of routine practice, this study does not support those assumptions or standards. Although limited to only two teaching clinics, some of the indications raise serious issues within the profession if these are in any way representative of chiropractic teaching institutions as a whole. The authors do not necessarily jump to that conclusion but feel it is only appropriate to make note of the seriousness of these findings when barely half of the patients in a sample of 200 received any

advice on how to become healthy. Every condition assessed had a component of prevention that could have been applied, for example, CVD risks; some patients were at risk but did not indicate a condition of CVD, yet only about 17% received any advice on health promotion that could be determined from their chart. Hypertension was another serious health risk and some were hypertensive at the visit yet received no advice. This seems inexcusable.

Among conditions that perhaps DCs would feel more comfortable addressing that have associated preventive efforts which have been shown to improve outcomes, such as arthritis,[14] no advice was given that might improve those outcomes. Currently, the authors have an article in press evaluating respondents of the NHIS looking at the specific recommendation by DCs, physicians, and physical therapists concerning advice to arthritis sufferers to lose weight and increase exercise levels.[15] There was no statistically significant difference noted among those providers in levels of advice given to patients and only a minority of patients received any advice in those two categories.[15] Practice changes will need to be at least partially driven by our teaching clinics.

A total of 40 patients self-reported a state of "poor conditioning" and none was given any advice. How much more reactionary can one be? Even those who are OW or OB were no more likely to receive advice than someone of normal weight, although those of normal weight could probably use advice on PA and other healthy behaviors as well.

Mean BMI in the sample was ≥OW. Among those with lower back pain—the bread and butter of chiropractic practice—65% were OW/OB, a known risk factor for development of chronic spine problems.[8] Yet, a minority of them was advised on anything that would address this or the lower back pain in general when it came to health-promoting advice.

For whatever reasons those with a family history of cancer seemed to be getting advice. All who reported that history were within the group receiving advice on prevention in aggregate.

Next, this study indicates that there are excellent opportunities for DCs to engage patients on preventable causes of morbidity and early mortality. The number of patients who are OW/OB or suffer from other health conditions indicates that they are in the same state of health as those seen by other providers, specifically, in need of advice on how they can reduce disease risk factors and improve long-term health outcomes. The opportunity is there but in this study time was not taken by a majority of interns to address these risks. This brings up another point: a DC was supervising these patients and signing off on the care that was being delivered by those interns. DCs should have been interested in seeing these conditions addressed but apparently in the majority of cases were not. We must ponder why they did not counter this omission. Obviously this makes an additional statement about the need to remediate those in the profession on the topic of prevention and health promotion since the implementation of the new CCE standards. If attending doctors do not know what to do, clearly interns will not be held to the current standard and this will trend into clinical practice. In Ndetan et al,[12] one analysis found that interns weighed heavily the thoughts of key influencers of their future practice style as to whether they would perform health promotion in practice. In fact, this weighed as strong a predictor of who would do health promotion as whether the interns felt they were equipped with the skills to perform it. Staff doctors supervising them may be doing a tremendous disservice to interns when they fail to set an example of advising patients or allow patients to simply go unadvised as a failure of their clinical oversight.

The authors of this article sincerely hope that these findings are not reflective of all chiropractic teaching institutions and do understand the limitations that it presents. For one, filing systems were not uniform at the respective campuses and were actually not well suited for mining this information. In addition, health promotion advice could have been given and simply not charted, although that is not an acceptable excuse. Further, any implementation of a new standard will take time to work its way into actual practice and the investigators acknowledge this, although some charts were active as late as fall of 2009, some 2 years after the new CCE standards went into effect. Finally, we had to look carefully to identify what we felt were red-flag conditions. Sometimes there was difficulty in determining if an adequate history was even taken and there is always a tendency for a healthy worker effect in student teaching clinics where they have to see a set number of patients. And certainly these two clinics may not be representative of the professions' teaching clinics in general and we do not make that assumption on the back end of this assessment, though some may choose to do so.

CONCLUSION

This initial assessment at two teaching clinics indicates there is work to be done in the area of health promotion advice reaching patients in those teaching clinics within this sample. Chiropractic teaching clinics should assess what they are doing to help Americans reach their health goals. The CCE standards clearly call for this. By the time this manuscript reaches press, it will have been over 3 years since the CCE standards on wellness and health promotion were put in place. In its site visits of various institutions, CCE needs to seriously evaluate what is being done to meet these standards and should require institutions to remediate staff and faculty to see that the standard is met.

DCs see patients more frequently than their primary care counterparts. Comorbid conditions associated with patients who develop chronic spine conditions lead to premature morbidity and mortality. The rapport that DCs have with patients who choose them for routine care of spine conditions puts them in a unique position to cue patients to take behavioral action toward better health. Interns state that they want to use health promotion as part of routine practice. There is an opportunity to shape future practitioners so that they include primary prevention as a part of what they do, if the profession cares to move in that direction. Future research should review opportunities for health promotion at other teaching institutions. It should also look at mechanisms of delivery for health promotion, including better tracking of patients who need it and how staff doctors are trained to deliver oversight to interns in the area of primary prevention. It would be unfair to chiropractic patients if their health promotion needs are left unmet simply as a result of omission and dereliction of duty. Chiropractic patients simply deserve a higher level of preventive care and the profession should be rising to that occasion.

CONFLICT OF INTEREST

The authors have no conflicts of interest to declare.

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