Are Patients Receiving Health Promotion Advice in the Chiropractic Teaching Clinic Setting?
An Impact Assessment of a Brief Intervention to Increase Advising Rates and Goal Setting

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Purpose: The aim of this study was to analyze patient-reported health issues and levels of engagement, discussion of needed lifestyle changes, and goal setting with the patient's intern or staff doctor before and after a brief intervention to increase health-promoting activities in the clinic. **Methods:** Patient surveys were developed and administered to outpatients before and after a brief intervention aimed at increasing staff and intern engagement with patients on health promotion measures. Patients self-reported areas of need and levels of engagement by their doctor or intern. Data were analyzed as pre- and postintervention independent, cross-sectional samples. Frequencies and chi-square assessments were performed. **Results:** One hundred twenty-eight preintervention surveys and 162 postintervention surveys were collected. Back pain was the most common reason for being seen in the clinic (60% of patients) and most patients were white. More than 10% were smokers in both samples. Many patients reported poor diet, unhealthy weight, sleep issues, stress, or lack of regular physical activity, but 65% of the preintervention group and 72% of the postintervention group said a needed lifestyle change was discussed. Goals were set for 74% of the preintervention group and 84% of the postintervention group ($p = .04$). Information on lifestyle change was received by 52% of preintervention patients and 62% of postintervention patients and most were satisfied with this information. Goal setting was more common when a lifestyle change was discussed. Written information that was related to physical activity, for example, increased 350% ($p < .0001$). **Conclusion:** There are many opportunities for discussing needed lifestyle changes with patients. Patients self-report health behavioral issues related to physical activity, unhealthy weight, diet, stress, and sleep. More can be done in this area by this clinic, but initial assessments of impact from a brief intervention seem to have increased some levels of engagement by interns. (J Chiropr Educ 2011;25(2):132–141)

Key Indexing Terms: Chiropractic; Health Behavior; Health Promotion; Public Health Practice

INTRODUCTION

The United States has set goals on how to help Americans reach a level of health that will result in lower overall disability, morbidity, and early mortality of its citizens.[1] Various health care groups have called on health care providers to do more in the area of providing primary preventive measures to their patients.[2–4] However, in spite of this, the proportion of patients who report that their primary care doctor has engaged them on needed lifestyle changes remains low.[5–9] In addition, assessments of what chiropractic teaching institutions are doing, along with assess-

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ments of large secondary data sets, indicate that the chiropractic profession is lacking in its engagement of patients on prevention as well.[10–13]

The chiropractic profession has called on all of its providers to deliver more health promotion (HP) to patients.[14, 15] Recently, the Council on Chiropractic Education instituted a standard on wellness and HP that requires all of its member institutions not only to teach HP methods to students but also to assess students' ability to perform these levels of engagement with patients before graduation.[16] The clinic involved in the current study had participated in a two-campus assessment of patient files and found fragmented record keeping and scant evidence of engagement of patients on behavior change and goals set to monitor that change.[17] However, in a previous assessment at this college, interns' intentions to use HP after graduation was over 80%.[18] If interns intend to do this but do not show efforts while in training, the authors believe there may be a disconnect in this intention; it is necessary to develop a skill set to be successful at the practice level. This study was aimed at assessing patient-reported levels of engagement on HP and wellness goal setting by interns and staff doctors at a chiropractic teaching clinic before and after a new educational and clinical effort (intervention) to boost levels of primary HP messaging.

METHODS

Study Design

This study used a pretest/posttest design, with the intervention being an educational program for interns and the outcome being patient-reported intern behavior change. The outcomes were assessed on independent samples of patients before and after the educational program was implemented.

The campus-based outpatient teaching clinic allows interns to see patients under the close supervision of staff doctors to whom they have been assigned. The associate dean of clinics issued an order making specific levels of engagement in HP advice related to primary prevention mandatory. As part of the effort to increase the levels of engagement on HP by interns and staff doctors with patients at the clinic, a 1-hour in-service educational and clinical intervention was held, focusing on how patients change their lifestyle and health behavior and how to dialogue with patients about findings in the history that may warrant behavior change, as well as types of HP advising strategies to be implemented in the clinic. Selected materials were placed in the intern preparation area, including flyers on a variety of lifestyle health factors such as diet, increasing physical activity, safety of backpacks, automobile safety, preventing reoccurrence of spine injury, stress reduction techniques, and stage-based smoking cessation information.[19] Instruction was also given to interns on the materials, where materials would be made available, and when and how to use them with patients and how this engagement should be recorded in the chart. For example, techniques were discussed to assess how open a patient was to smoking cessation advice. The in-service provided examples of brochures that would be used with patients who might be thinking about smoking cessation, actively gathering information on cessation, or actively working on this. The brochures were available from the Texas Department of Health Services "Yes You Can" program[19] and were made available in the clinic. This program was chosen since it is based on a stages model[20] and is part of a larger statewide program. A record-keeping system was also in place to identify opportunities for delivery of HP messaging and to allow for goal setting and follow-up with patients who needed lifestyle modification and to allow for supervising doctors to evaluate this effort.

In addition to the in-service, a required course on wellness now includes emphasis on health behavior change and ways in which providers may enhance this process with patients in a clinical setting. This course is taught at the midpoint of the students' academic experience but before entrance into the internship.

With Institutional Review Board approval at the college, a survey was developed aimed at those who had been patients in the clinic for more than an initial visit. The survey was designed by the investigators who were research faculty and the associate dean of clinics. It was reviewed for face validity by two doctors of chiropractic and three research faculty members.

The survey included questions on demographics and health behaviors, along with questions about the patient's intern, whether a lifestyle change was recommended, and if the respondent was asked about progress. Patients were also queried as to whether goals were set. These used Likert scales with five-point response categories. The patient survey (Fig. 1) was administered before and 3 months after the implementation of the education campaign to increase advising levels with staff and interns. Patients were informed that they did not have to participate and that,

Health Promotion and Wellness Survey

This voluntary, confidential survey is to help us better understand how health and wellness information reaches our patients. **It will not affect your relationship with our clinic or your intern, or staff doctor in any way.**

1. Please check all the behaviors or descriptions that characterize you:
   ❑ I smoke **❑ I do not exercise regularly** **❑ My diet is poor**
   ❑ My weight is not optimal **❑ I am very stressed** **❑ I have trouble sleeping**
   ❒ Not applicable

2. Which of the following has been discussed with you here in the clinic?
   ❑ Smoking **❑ Regular exercise** **❑ Poor diet**
   ❑ Weight **❑ Stress** **❑ Sleep**

3. Were specific goals discussed for you related to:
   ❑ Smoking **❑ Regular exercise** **❑ Poor diet**
   ❑ Weight **❑ Stress** **❑ Sleep**

4. Was a needed lifestyle change discussed with you to improve your health?
   ❒ Strongly Disagree **❒ Disagree** **❒ Not sure** **❒ Agree** **❒ Strongly Agree**

5. Were you given a brochure or resource to help you make a lifestyle change to improve health? (a person, a place, phone number, website, or other resource as well)
   ❒ Strongly Disagree **❒ Disagree** **❒ Not sure** **❒ Agree** **❒ Strongly Agree**

6. Were goals set to help you make a change that would improve your health?
   ❒ Strongly Disagree **❒ Disagree** **❒ Not sure** **❒ Agree** **❒ Strongly Agree**

7. Were you asked about your progress on a needed lifestyle change?
   ❒ Never **❒ Once** **❒ Several Times** **❒ Each Time I Visit the Clinic**

8. Who helped you most when discussing or making lifestyle changes in our clinic?
   ❒ Staff Doctor **❒ Student Doctor/Intern** **❒ Other Staff-person**

9. What is your age_____

10. What is your gender? **❒ Male** **❒ Female**

11. What best describes your race/ethnicity?
    ❒ White **❒ Black** **❒ Hispanic/Latino** **❒ Asian** **❒ American Indian**
    ❒ Other

12. What condition were you first seen for here in the clinic?
    ❒ Lower Back Pain **❒ Neck Pain** **❒ Headaches** **❒Other joint/muscle problem**
    ❒ Other List)_____

13. If you were provided information or brochures/ hand-outs in the clinic, how satisfied were you with those materials regarding helping you make a healthy change?
    ❒ Very Dissatisfied **❒ Dissatisfied** **❒ Not sure** **❒ Satisfied** **❒ Very Satisfied**

OFFICE USE ONLY

Tri ___ Yr of Survey _____ Administered: Pre

Figure 1. Survey used in assessing level of engagement in health promotion and wellness by interns and staff doctors in a chiropractic teaching clinic (English version).

if they did not, it would not have any impact on their relationship with their intern or the clinic staff. Pre- and postintervention independent surveys were taken by research personnel. These were cross-sectional in nature and did not represent a cohort sample. Independent impact evaluations are common to community health sciences and have been noted in the current chiropractic literature as well.[21–23]

Data Management and Analysis

Data for the pre- and postintervention assessment surveys were entered into an SPSS version 16 (SPSS Inc, Chicago, IL) database for analysis. The data set was reviewed for consistency by the project's biostatistician. Most of the five-point response variables were dichotomized to facilitate binary comparisons. When this was done, negative to neutral responses were dichotomized and the two higher positive categories were recoded to serve as the other binary variables. Frequencies (percent) were generated for each survey variable for pre- and postassessments. Mantel-Haenszel odds-ratios (OR) and 95% confidence intervals (CI) were generated from binary logistic regression models to assess the impact of interns' advising and goal setting on patients' health behavior and lifestyle, separately for the pre- and postintervention data. Differences in the survey responses between pre- and postassessments were calculated from the formula: percent (%) difference = [2 (pre – post)/(pre + post)] * 100%.

Pre/post differences were tested for statistical significance at the 5% level ($\propto$ = .05) using the Pearson's chi-square or Fisher exact test, where applicable.

RESULTS

Demographics

One hundred twenty-eight surveys were collected in the presample and 162 in the postsample. The mean age of the patients was 47 years in the presample and 45 years in the postsample. Forty-one percent of the presample and 45% of the postsample were male. Seventy-three percent of the presample and 66% of the postsample were white. The most common chief complaint in the clinic was lower back pain and this accounted for about 60% in both samples. Demographic data are reported in Table 1.

Table 1. Demographics and common health conditions of respondents to health promotion/wellness survey before and after an educational/clinical intervention to improve interns/staff doctors' level of engagement at a chiropractic teaching clinic

Variable	Preintervention *n* (%)	Postintervention *n* (%)
Demographic		
Male	50 (41.3)	72 (45.0)
Female	71 (58.7)	88 (55.0)
White	89 (73.0)	104 (66.2)
Black	6 (4.9)	7 (4.5)
Hispanic	19 (15.6)	26 (16.6)
Asian	4 (3.3)	14 (8.9)
American Indian	1 (0.8)	3 (1.9)
Other	3 (2.5)	3 (1.9)
Mean age	47.2 (16.7)	44.9 (16.6)
Health condition		
Lower back	77 (62.1)	97 (59.9)
Neck	50 (40.3)	77 (47.5)
Headache	13 (10.5)	32 (19.8)
Joint/other	35 (28.2)	28 (17.9)

% = Percentage of patients who responded to the question.

Behaviors Reported by Patients That Could Represent Needed Change in Lifestyle

Less than 10% of both groups of patients smoked. In the presample, 45% did not exercise on a regular basis, whereas only 35% reported this in the postsample. Neither the difference in proportion of smokers nor exercise habits was statistically significant. Twenty-one percent said they had a poor diet in the presample and this dropped to 11% in the postsample. This difference was statistically significant at $p = .02$. However, changes in self-reported nonoptimal weight were not significantly different (45% versus 39%).

Twenty-nine percent in the presample and 25% in the postsample reported being "very" stressed. Those differences were not statistically significant. Trouble sleeping was noted by 25% of the presample and 24% of the postsample. Table 2 has complete information on behaviors reported by patients pre- and postintervention.

Patient-Reported Levels of HP and Wellness Engagement by Interns and Staff Doctors

A needed lifestyle change was discussed with patients 65% of the time in the presample and 72% of the time in the postsample. This was almost a 10% increase, but was not statistically significant. Goals were set for patients to help achieve a lifestyle change in about 74% of those in the presample and in almost 84% of the postsample; this difference was significant at $p = .04$. A brochure or resource was reportedly received by 52% of presample patients and 62% of postsample patients and satisfaction with the information was noted by 78% and 81% of pre- and postsample patients, respectively, but neither was statistically significant. Differences in being asked about their progress on a lifestyle change were not significant ($p = .07$) and in the presample, 86% said the intern was the person who discussed needed lifestyle changes with them and 13% said it was a staff doctor. Postassessment, 97% said their intern engaged them and <1% said it was a staff doctor (Table 3).

Goal Setting

In general, if a lifestyle change was discussed, goals were more likely to be set: OR = 3.1 (95% CI,1.3–7.1) preintervention and OR = 9.6 (95% CI, 3.6–25.7) postintervention. This was more pronounced within the postintervention group (93.4%) than in the pregroup (81.8%) ($p = .02$ (Table3). When goals were set, patients were also more likely to be asked about progress in both the pre- and postsamples [OR = 3.8 (95% CI, 1.3–11.5) versus OR = 5.0 (95% CI, 1.7–14.9)] but differences before and after were not significant ($p = .31$).

Comparisons were made among those reporting a health habit and those not reporting it, as well as among the pre- and postsampled patient population. Behavior or habits along with whether goals were set, information given, and satisfaction levels with information given are reported below. Complete information is found in Table 3.

Table 2. Patient-reported modifiable behavior/lifestyle before and after an educational/clinical intervention to improve level of health promotion/wellness engagement by interns/staff doctors at a chiropractic teaching clinic

Behavior/Lifestyle	Preintervention *n* (%)	Postintervention *n* (%)	*p* Value[a]
Smoke	10 (7.8)	15 (9.3)	.66
No regular exercise	57 (44.5)	57 (35.2)	.11
Poor diet	27 (21.1)	18 (11.1)	.02[b]
Nonoptimal weight	58 (45.3)	63 (38.9)	.27
Very stressed	37 (28.9)	41 (25.3)	.49
Trouble sleeping	32 (25.0)	38 (23.5)	.76

n (%)= Number of patients responding positively (percentage of patients who responded to question).

[a] *p* Values are reported Pearson's chi-square test comparing responses in the pre- and postassessment samples.

[b] Significant at $\alpha = .05$.

Table 3. Patient-reported level of engagement in health promotion/wellness and goals setting by interns/staff doctors at a chiropractic teaching clinic before and after an educational/clinical intervention on health promotion messaging

Level of Engagement	Preintervention		Postintervention		*p* Value[a]
	n (%)	OR (95% CI)	*n* (%)	OR (95% CI)	
In general					
Lifestyle change discussed	79 (65.3)		110 (71.9)		.24
Health goals set	89 (73.6)		127 (83.6)		.04[b]
Brochure given	64 (52.5)		95 (61.7)		.12
Satisfied with brochure	78 (75.7)		114 (80.9)		.33
Asked about progress on health goal	99 (83.2)		136 (90.7)		.07
Helped most with lifestyle changes					
Staff doctor	14 (13)		1 (0.7)		<.0001
Student doctor/intern	93 (86.1)		131 (97.0)		
Other staff-person	1 (0.9)		3 (2.2)		
Specific behavioral components					
Smoking discussed when patient is smoker	5 (50.0)	22.4 (4.9, 103.2)	11 (73.3)	55.0 (13.9, 217.1)	.75
Goals set for smoking patients	4 (80.0)	4.5 (0.4, 45.9)	8 (72.7)	17.5 (3.2, 96.3)	.76
Brochure given for smoking	2 (50.0)	6.6 (0.5, 80.8)	7 (87.5)	24.1 (3.7, 155.2)	.16
Exercise discussed in general	100 (78.7)		126 (77.8)		.84
Exercise discussed when patient does not exercise	52 (91.2)	4.8 (1.7, 13.6)	46 (80.7)	1.3 (0.6, 2.9)	.11
Goals set for exercise	45 (86.5)	1.1 (1.0, 1.2)	40 (87.0)	0.7 (0.3, 1.8)	.95
Brochure given for exercise	9 (20.0)		36 (90.0)		.95
Diet discussed in general	38 (29.9)		53 (32.7)		.61
Diet goals set in general	22 (17.3)		34 (21.0)		.43
Diet discussed when patient has poor diet	16 (59.0)	5.2 (2.1, 12.7)	15 (83.3)	13.9 (3.8, 50.9)	.09
Goals set (poor diet)	12 (75.0)	1.1 (0.9, 1.4)	10 (66.7)	12.3 (2.5, 60.5)	.61
Weight discussed in general	35 (27.6)		47 (29.0)		.79

(*Continued on next page*)

Table 3. (*Continued*)

Level of Engagement	Preintervention		Postintervention		*p* Value[a]
	n (%)	OR (95% CI)	*n* (%)	OR (95% CI)	
Weight discussed when patients do not have optimal weight	25 (43.1)	4.5 (1.9, 10.4)	36 (57.0)	10.7 (3.8, 31.6)	.12
Weight goals set for patients without optimal weight	19 (76.0)	6.3 (0.3,130.8)	20 (55.6)	11.0 (3.8, 31.6)	.10
Stress discussed in general	49 (38.6)		80 (49.4)		.07
Stress discussed when patient is stressed	23 (62.2)	4.4 (2.0, 10.0)	31 (75.6)	4.6 (2.0, 10.1)	.20
Stress reduction goals set for patient with stress	16(69.6)	2.4(0.9, 6.4)	22(71.0)	2.3(0.9,5.5)	.91
Sleeping discussed in general	35 (27.6)		55 (34.0)		.24
Sleeping discussed when patient has trouble sleeping	17 (53.1)	5.3 (2.2,12.6)	24 (63.2)	5.1 (2.4, 11.2)	.40
Goals set for patients with trouble sleeping	10 (58.8)	1.0 (0.1, 8.6)	19 (79.2)	1.7 (0.6, 4.9)	.16

n (%)= Number of patients responding positively or "yes" (percentage of patients who responded to question). OR (95% CI) = Odds ratio (95% confidence interval) of patients' responses after having received specified intervention.

[a] *p* Values are reported Pearson chi-square/Fisher exact test comparing proportion of responses in the pre- and postassessment samples.

[b] Significant at α=.05.

Smoking

In the preintervention sample, 5 of the 10 smokers said smoking was discussed. When smoking was discussed with a smoker versus a nonsmoker, smokers were much more likely to report this as a discussed topic [OR = 22.4 (95% CI, 4.9–103.2)]. In the postsample the same was noted when comparing smokers to nonsmokers [OR = 55 (95% CI, 13.9–217.1). However, differences in this engagement level from pre- to postintervention were not significantly different (p = .75). Among smokers, goals were set for four of the five in the presample and for eight of the 11 in the postsample. The differences were not significant between the pre- and postgroups. Two of four smokers reported that a brochure was given to them in the presample and both were satisfied with it. In the postsample, seven of eight were given brochures and six reported satisfaction with them.

Exercise

Exercise levels were reportedly discussed with <80% of both samples. Fifty-seven of the pregroup reported that they did not exercise regularly. Of those, 52 said they were given advice to increase exercise. In the postgroup, 57 said they did not exercise and 46 of them said the need was discussed. Although it was more likely discussed in the pregroup with those who did not exercise compared with those who did report exercising, differences between the pre- and postgroups were not significant. Among those who said it was discussed, 45 of 52 said goals were discussed with them in the presample and 40 of 46 in the postsample. Those differences were not significant. Among those who had goals set, only nine of 45 received any kind of brochure and, of those, six stated they were satisfied with the information. However, in the postsample of patients, 40 of 46 had goals set if

they had exercise discussed and 36 of 40 said they received a brochure. This was a 350% increase and was significant at the $p < .0001$ level. Thirty-four said they were satisfied with the brochure they received.

Diet

In the presample, patients reported diet being discussed with them 30% of the time and in the postsample 33% of the time. Of those, 17% of the presample said goals were set for them and 21% of those in the postgroup. These differences were not significant. Those in the presample with a self-reported poor diet (59%), compared with those who did not report a poor diet, were five times more likely to say diet was discussed [OR = 5.2 (95% CI, 2.1–12.7)]. However, in the postsample, 83% reporting a poor diet said it was discussed—a 41% increase [OR = 13.9 (95% CI, 3.8–50.9)]. Seventy-five percent of those who said diet was discussed also said goals were set. Goal setting after discussion was more likely in the postsample [presample OR = 1.1 (95% CI, 0.9–1.4) versus postsample OR = 12.3 (95% CI, 2.5–60.5)]. Overall differences from presample to postsample were not significant.

Weight

Weight was discussed with just under 30% of both samples. Nineteen percent of those in the presample said they had goals set compared with 20% in the post. Among those self-reporting nonoptimal weight, compared with those not reporting this, 43% in the presample and 57% in the postsample stated that it was discussed. Goals were set for those who reported less than optimal weight more frequently than for those not reporting this. The difference was not significant in the presample, but it was significant in the postsample [OR = 6.3 (95% CI, 0.3–130.8) versus OR = 11.0 (95% CI, 3.8–31.6)]. Between-group comparisons were not significantly different ($p = .10$).

Stress

In the presample, stress was discussed as a topic in about 39% of the sample compared with almost 50% in the postsample. This difference was not significant at $p = .07$. Almost 70% of those in the pregroup who reported that stress was discussed stated that goals were set; this was also stated by 71% in the postgroup.

Sleep Issues

Twenty-eight percent of the presample reported that sleeping issues were discussed, compared with 34% of the postsample. If sleep was reported as an issue, it was more likely discussed in both groups when compared with those who did not report it as an issue [presample OR = 5.3 (95% CI, 2.2–12.6) versus postsample OR = 5.1 (95 CI, 2.4–11.2)]. Between-group differences were not significant ($p = .40$). Among those who discussed sleep issues, goals were set more frequently in the postgroup as well (59% versus 79%). Goal setting was no more likely in those with sleep issues compared with those without and differences between the pre- and postgroups were not significant ($p = .16$).

DISCUSSION

Self-reported lifestyle-related issues are clearly a problem for many chiropractic patients visiting an outpatient teaching clinic. This clinic has chosen to follow the progress of their interns and staff in their advising roles. Although smoking prevalence in this study population was lower than the national average (about 10%), ≥ 40% report issues with healthy weight, which mirrors the nation,[24] and between one in four and one in three patients report issues with stress, sleeping patterns, or unhealthy diet. More than one-third in both samples did not get regular exercise. These results indicate that a large segment of the patient population needs health promotion advice. This assessment was aimed at measuring initial impacts on patient-reported levels of engagement and goal setting, not long-term health outcomes. Although many of the percentages of engagement went up over the time frame studied, most were not statistically significant when comparing pre- and postassessment. Since this is an assessment of initial impact, it does not give a clear picture of whether ground is being gained in the area of patient advising and may only show a forced effort based on an initial push by the clinic to see this happen. However, it was encouraging that not only did patients receive needed information, but most patients reported satisfaction with that information as well.

Goal or agenda setting is important for enhancement of self-efficacy and successful behavior change[25, 26] and seems to have been helpful in this small study. When a lifestyle change was suggested, goals were more likely to be set in both the pre- and

postgroups and the level of engagement was, at times, statistically higher in the postgroup—a positive trend to note. Those patients reported more engagement on their progress levels as well, though not always significantly different between pre- and postgroupings. Follow-up is a crucial piece of patient advising[8, 25] and this area needs more work in this clinic system.

Perhaps a key piece of information is that, in teaching clinics such as this one, a clinic director may set policy, but if floor-supervising or attending doctors do not promote or enforce the requirements to engage patients, the number of patients getting needed advice will be reduced. Again, numbers did increase in the time observed, but some patients still did not report being advised or engaged or, in some cases, did not have goals set or follow-up reported. Overall, some advising rates were high. A needed lifestyle change was discussed in 65% of the presample and 72% of the postsample, which is encouraging. In an early assessment of impact, the efforts have made some difference and, hopefully, additional follow-up will show a trend upward.

LIMITATIONS OF STUDY

This assessment has a few significant limitations. First, it is an attempt to assess an early initial impact with two small independent samples and statistical models were applied as such. Although some patients may have been in both samples, there is no way to determine this and the number is probably so small that the chance of this disrupting the independence of the samples is very unlikely. Some of the observed differences between the pre- and postintervention groups may be attributable to sample variations. However, patient demographics in most cases were not statistically different nor were self-reported levels of health behavior such as smoking status, sleep habits, stress levels, and chief complaint; therefore, they are unlikely to compromise the assessment of the overall impact of the intervention. Self-reported poor diet was half as likely to be reported in the postsample, which may or may not be due to sample bias. This is difficult to tell. One of the main goals was to see if discussion with patients also led to goal setting and this result is apparent but not always significant.

While this study assesses an initial impact of the changes in the clinic associated with a brief intervention to increase advising, some changes are notable and may be a result of this overall effort or could be attributed to policy mandates alone. The authors attempted to test this overall process but were limited by this design and independent nature of the samples. Percent differences were compared and chi-square comparisons were made to assess for actual differences where possible and these do not seem to indicate a dramatic difference in the two samples' basic characteristics but this cannot be completely ruled out because of the independent, cross-sectional design.

CONCLUSION

Self-reported health behavioral issues are common in this teaching clinic. Efforts to get more information into the hands of patients can be challenging but the opportunities are abundant. Goal setting increased in the postsample and this is a critical piece to helping patients change behavior. Discussion also led to goal setting apparently in some cases, such that when discussion was held, goal setting was more likely. The two should go together. Further increases are likely to be aided by attending doctors tracking needed engagement, continued goal setting, and additional follow-up over time. Continued efforts to make interns aware of the number of patients needing this valuable information may also stimulate more interaction. More research in what constitutes an effective plan to increase engagement of patients is needed in chiropractic teaching clinics. The potential for a strong dose response should also not be overlooked since patients may be seen several times. Additional longitudinal tracking of engagement levels would aid supervising clinicians in assessment of effective levels of intern and staff advising as would a cohort study. It is hoped that further plans to increase health promotion levels and prevention advice provided to clinic outpatients will be a part of the long-term goals of the institution.

CONFLICTS OF INTEREST

The authors have no conflicts of interest to declare.

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