

Health Promotion:

Exploring the Behaviour of Chiropractic Patients

JENNIFER R. JAMISON

ABSTRACT: It has been suggested that clinicians should be looking at new ways to enhance their patients' self-care. Patient education is one strategy which primary providers may use. This study investigates the behaviour of chiropractic patients with a view to identifying the health information messages most needed in the chiropractic clinic. *Research Methods:* An exploratory study of chiropractic patients was undertaken to investigate patients' health-relevant behaviours. Purposive sampling of nine Australian chiropractic clinics was undertaken. Convenience sampling of patients attending these clinics resulted in 102 patients participating. Participants completed a questionnaire. Data was collected and collated with a view to describing the participants' dietary, exercise, medication and risk-screening behaviours. *Results:* The majority of patients in this study were non-smokers, did not abuse alcohol, exercised regularly, had a diverse diet, made sensible dietary choices and did not over-medicate. Most also had been screened for predictors of cardiovascular disease. The majority of females had been screened for the early detection of cervical and breast cancer. *Conclusions:* The behaviour of participants in this study suggests that many chiropractic patients are aware of and behave in a manner consistent with well established health promotion messages. As a group, chiropractic patients may nonetheless benefit from their chiropractor's evaluation of topical health information. Health information messages should, however, always be tailored to the needs of the individual.

INDEX TERMS: MeSH: CHIROPRACTIC; HEALTH PROMOTION; PATIENT EDUCATION; OBESITY. OTHER: PATIENT BEHAVIOR.

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It has been suggested that "Self-care is definitely the primary health resource in the health care system."¹ While primary practitioners are uniquely positioned to promote their patient's health through self-care, health education is a time-consuming and demanding activity. It may therefore be more cost-effective if chiropractors are aware of the health information topics of most benefit to chiropractic patients. An earlier study did suggest that there may be some support amongst Australian chiropractic patients for general health information not immediately relevant to the musculoskeletal system.² Trends in this and another study furthermore suggested that information on exercise fitness and stress management may be in greatest demand amongst chiropractic patients.^{2,3} Chiropractors who select a primary care rather than primary contact role may consequently need to become aware of the more prevalent non-musculoskeletal health needs of chiropractic patients.

It was decided to undertake an exploratory study to ascertain which health education messages may be of interest to chiropractic patients. A previous study in Western Australia, Queensland and Victoria had found that 74% of participants had maintenance chiropractic, 69% exercised regularly, 40% took nutritional supplements, 84% were non-

smokers, and 86% were teetotalers or drank alcohol within safe limits.⁴ In order to further investigate health-relevant behaviours of chiropractic patients and clarify appropriate content for non-musculoskeletal health information messages in chiropractic clinics, it was decided to investigate the current health behaviours of chiropractic patients in New South Wales, South Australia and the ACT.

RESEARCH METHOD

A convenience sample of patients attending the clinics of eight chiropractors practising in New South Wales, the ACT and South Australia was undertaken. In addition, one Victorian chiropractic practice that had not previously been studied was included. Care was taken to draw participants from practices in inner city, suburban, coastal and country town areas. Patients were requested to complete a questionnaire, and a research assistant was on hand to clarify any queries. Intervention by the research assistant varied from no assistance to, in certain cases, providing assistance with the entire questionnaire.

The questionnaire included open and closed questions. Questions focused upon health-relevant behaviours and patients' health perceptions. Data was collected and smoking, drinking, eating, exercise and medication behaviour patterns described. Participants were asked to subjectively rate their diet and were also asked to indicate the number of types of food they ate from each food group. All five food groups were listed. Nutritional intake was analysed using a nutritional index derived from the five food groups.⁵ Persons who ate more than 12 types of food each day were categorised

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as having excellent nutrition, 10-12 types of food rated as good, 7-9 as a moderate diet, 4-6 as a fair diet and less than 4 as a poor diet. Participants were also requested to indicate whether they regarded their major behavioural health risk to result from alcohol, smoking, a sedentary lifestyle, stress, a low fibre or calcium intake, a high salt or fat intake, or a sweet tooth.

In addition to responding to questions to ascertain behaviours that promote health or habits that enhance risk, participants were asked to indicate if they had undergone any of a number of screening procedures. Included in the study list were: blood cholesterol, faecal occult blood, breast examination, prostate examination, blood/urine sugar tests, a Pap smear, mammography and a blood pressure measurement. In order to ascertain the general direction chiropractic patients believed any health improvement programs centred in chiropractic clinics should take, patients were asked to indicate whether they were interested in health improvement programs for spinal or general health.

RESULTS

One hundred and four patients were invited to participate; 102 agreed. All participants were 18 years or over. Fourteen percent were under 26 years of age, 25% were between 26 and 40 years, 20% were between 41 and 50 years of age, 32% were between 51 and 65 years of age, and 9% were 66 or over.

Seventeen percent had had chiropractic care for more than 20 years, 27% had had chiropractic care for between 10 and 20 years, 20% for 5 to 10 years, 11% for 2 to 5 years, and 25% had had chiropractic care for 24 months or less.

Fifty-two percent indicated they had begun their current schedule of treatments after the initial problem had resolved. For the purposes of this study, these patients were deemed to be having maintenance care. Forty-eight percent were receiving chiropractic care because their problem had recurred. For the purposes of this study, these patients have been categorised as having symptomatic care.

Thirty-six (35%) patients felt they needed chiropractic care to preserve their optimal health, 45 (44%) felt they needed chiropractic care to prevent recurrences of their original complaint, and 28 (27%) felt they deteriorated when chiropractic care was withdrawn. Seven patients indicated they needed chiropractic care for two of these reasons.

Seventy-eight percent of participants reported taking exercise weekly or more frequently. Forty-three percent believed their weight was within ideal limits; 50% perceived they were overweight.

Twenty-three percent of participants always selected low fat food alternatives, and a further 37% often did so. Only 17% never or seldom ate low fat product alternatives. Analysis based on the number of foods eaten found only one participant to have a poor diet; 13% had no better than a fair diet. Figure 1 compares the dietary behaviour of maintenance and symptomatic patients. One respondent considered his diet poor; 19% considered their diet no better than fair. Eleven percent considered their diet more healthy than it was found to be on objective analysis.

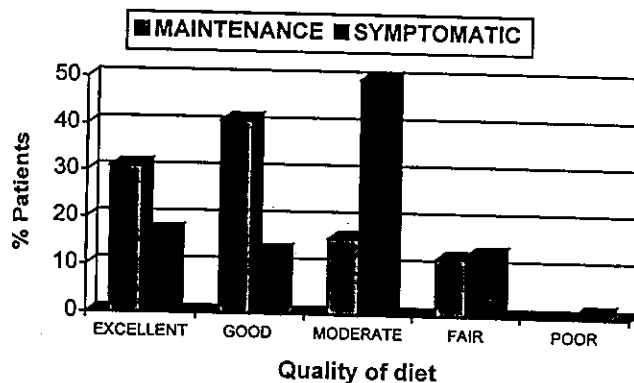


Figure 1. Dietary behaviour of chiropractic patients.

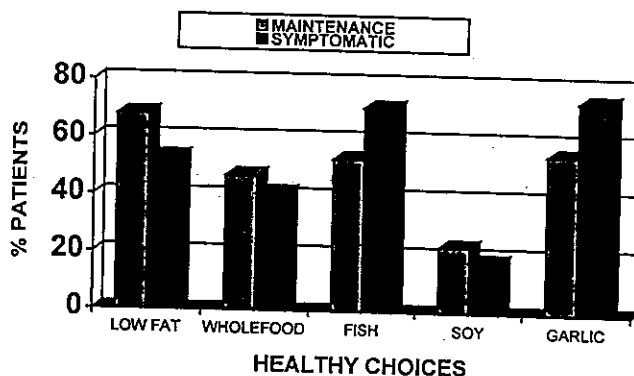


Figure 2. Comparing the usual healthy dietary choices of maintenance and symptomatic chiropractic patients

Sixty-three percent selected olive oil as their preferred fat source, 20% chose margarine, 11% preferred vegetable oil, and the remainder use butter. Twenty-eight percent never used salt at home, 27% only added salt when cooking, 37% added salt after tasting their food, and 8% salted their food before tasting it. Forty-three percent never ate highly salted foods, 35% ate highly salted food each month, 19% do so each week, and 3% consumed highly salted food each day.

Eighteen percent never bought fast foods, 47% did so each month, and 33% did so each week. The remainder ate fast foods each day. Thirty-two percent ate whole or unrefined foods whenever possible, 22% did so often, 37% did so sometimes, and the remainder seldom or never did so. Four percent never ate fish, 62% ate fish weekly or more frequently, and the remainder ate some fish each month. Sixteen percent never ate garlic, 20% ate it each month, 48% each week, and 16% have garlic on a daily basis. Sixty-three percent never ate soy products, 17% ate soy-based foods each month, 12% each week, and 8% each day. Figure 2 compares the usual healthy and Figure 3 the usual unhealthy dietary behaviours of maintenance and symptomatic patients. The salt added item compares persons who add salt during preparation or eating.

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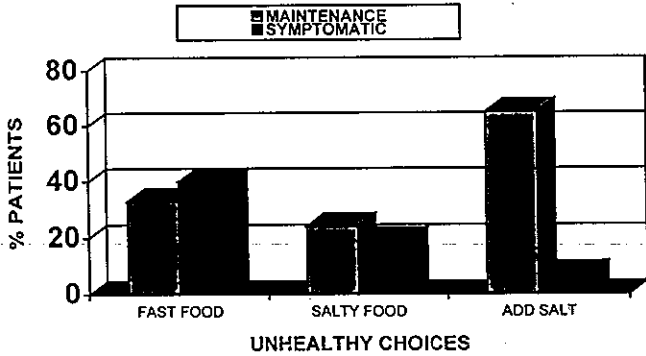


Figure 3. Comparing the usual unhealthy dietary choices of maintenance and symptomatic chiropractic patients.

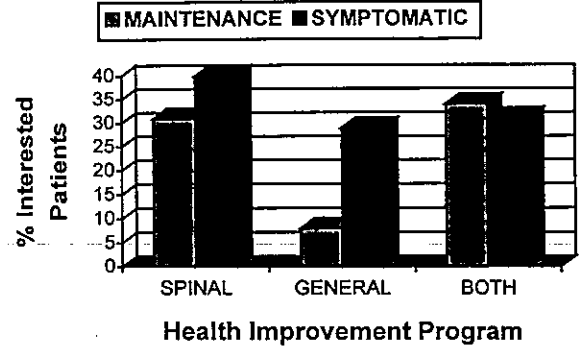


Figure 6: Health improvement programs: chiropractic patients' choices.

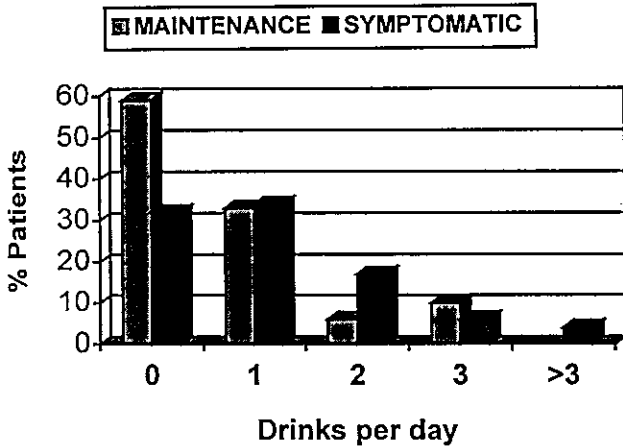


Figure 4. Alcohol consumption of chiropractic patients.

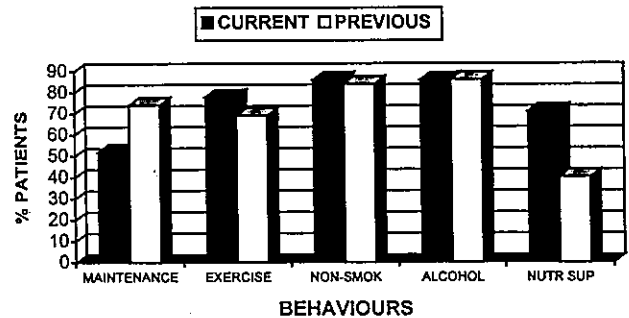


Figure 7: Chiropractic patient behaviours: comparing patients from different states and studies.

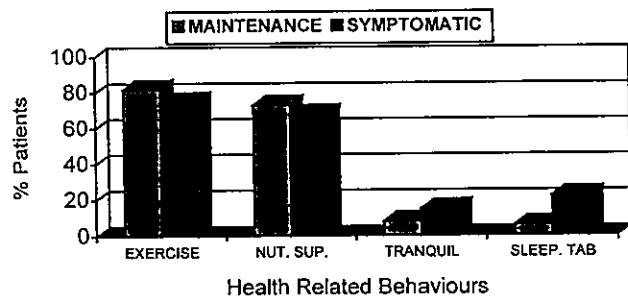


Figure 5. Chiropractic patient choices: exercise and drugs.

Eighty-six percent of participants were non-smokers, and 86% were teetotallers or drank alcohol within safe limits. Figure 4 compares the alcohol-drinking behaviour of maintenance and symptomatic patients. Only 15 respondents ever took sleeping tablets, and two thirds of these were from the symptomatic group. Twelve patients ever took tranquillisers, and two thirds were from the symptomatic group. Seventy-one percent took nutritional supplements. Figure 5 compares the behaviours of maintenance and symptomatic patients.

Ranked in order of importance, the major individual behaviour health risks perceived by participants were: a sweet tooth, stress, a sedentary lifestyle, a high fat diet, a low calcium diet, a high salt diet and smoking. All smokers identified smoking as a major health risk. Seventy percent of participants had had their blood pressure assessed, 61% had had a blood cholesterol test, and 50% had been screened for diabetes mellitus. Only 8% of the total sample had had a faecal occult blood test, and 88% of these were over the age of 50 years. An equal number of males and females had been tested. Sixty-seven percent of females had had a breast examination, 47% had had mammography, and 96% of these were over the age of 40 years. Eighty-five percent of women had had a Pap smear. Twenty-six percent of males had been screened for prostate cancer. Twenty-seven percent of participants indicated they believed they were at risk of a heart attack, 13% of a stroke, 14% of osteoporosis, 14% of diabetes, 14% of skin cancer, 7% of colon cancer, 5% of a cataract, and 3% of breast cancer.

When given the option of general or spinal health improvement programs, 24% opted for spinal hygiene, 19% for general health promotion programs, and a further 24% indicated their interest in both programs being offered. One third of participants omitted this question. An open question requesting information about the type of self-care of most interest revealed that half of the participants were interested in exercise and fitness. The other main areas of interest were

diet and weight control, and stress management and relaxation. Figure 6 compares the scope of health improvement programs favoured by maintenance and symptomatic care participants. Figure 7 compares certain well recognised wellness behaviours of this study group with a previous study conducted in Queensland, Victoria and Western Australia.⁴

DISCUSSION

Chiropractic patients participating in this study appear to, by and large, pursue a healthy lifestyle. The majority exercise, don't smoke, drink alcohol within safe limits and, with the exception of nutritional supplements, largely avoid medications. All smokers recognised that smoking constituted one of their major health risks, and some indicated a desire to quit. As shown in Figures 1-6, no distinct trend emerged that could lead chiropractors to believe that, as a group, maintenance care patients required more or less health education than symptomatic cases. Patient interest in obtaining health education from their chiropractor varied from disinterest to a desire for information on both spinal and general health. The necessity to evaluate the health promotion needs of each individual is apparent. There are, however, certain areas where a number of chiropractic patients may benefit.

One area that did emerge as having potential for health promotion in many chiropractic clinics is body weight. Excess weight is a global problem with a substantial health impact. Half the participants in this study consider themselves to be overweight. One in three Australian children are fat,⁵ and almost one in twelve Britons are obese.⁶ Americans spend more than \$30 billion a year on weight control programs and products,⁷ yet one in two U.S. adults are overweight, and more than one in five are obese.⁸ The total cost attributable to obesity in the U.S. amounted to \$99.2 billion in 1995.⁹

In a study of women over the age of 30 years who have never smoked and whose weight has recently been stable, it was found that the relative risk of death from all causes was 1.0 in those with a BMI under 19, 1.2 in those with a BMI between 19 and 24.9, and 1.3 for a BMI of 25-26.9.¹⁰ Recent data supports an upper individual BMI limit of 25 kg/m² and a population optimum of 20-23 kg/m².¹¹ Even moderate obesity greatly increases the changes of disability due to cardiovascular disease or musculoskeletal illness.¹²

Obesity has long been thought to be a behavioural disorder resulting from eating too much and/or exercising too little.¹³ Recent studies, however, suggest that body weight is under substantial genetic control, accounting for around 33% of the variation in body mass.¹⁴ Genetic influences appear to influence body fat distribution,¹⁵ weight gain in response to over-eating,¹⁶ and individual differences in basal metabolic rate.¹⁷ While this information promotes understanding of the challenge faced by those wishing to lose weight, it does not modify the fundamental management strategy of balancing energy consumption and utilisation through diet and exercise. The U.S. Preventive Services Task Force, which recommends that obesity be specifically considered in a periodic health examination, advocates exercise as a routine component of weight control.¹⁸ Only 20% of the adult population does enough activity to be considered physically fit.¹⁹ While this

study did not ascertain fitness levels, it did establish that 78% of participants exercised regularly. The importance of adequate exercise becomes very apparent when it is noted that during the period 1976 to 1980, when the prevalence of obesity in Americans increased from 25% to 33%, the average total daily calorie and fat intake decreased.²⁰ Despite this finding, as it takes anywhere from 60 minutes of standing to 17 minutes of running to use the 60 kJ in a 370 mL can of beer, dietary prudence is also necessary.

Dietary analysis using a food frequency method found that the majority of participants in this study group eat a variety of foods. While this suggests that most diets are nutritionally adequate, it does not preclude energy imbalance. Food choice may be an important consideration in overall energy balance. Some participants did indicate they believed they consumed a high fat diet, and 40% of participants failed to routinely favour low fat food varieties. A high fat intake is of more professional concern than the patients' most prevalent health concern of a 'sweet tooth'. A review of the results from 28 clinical trials has shown that a reduction of 10% in the proportion of energy from fat was associated with a reduction in weight of 16 g/day.²¹

Excess weight has been found to specifically correlate with an increased risk of coronary artery disease. The body weight which has been suggested as optimal with respect to cardiovascular risk is a BMI 22.6 kg/m² in men and 21.1 kg/m² in women.²² In addition to being aware of how to limit energy intake to achieve these weight levels, it may also be desirable that patients are aware of how to select a cardioprotective diet. Participants in this study did tend to favour olive oil, the healthiest of fats, avoid excess salt, and ate fish and garlic regularly. While a substantial number of participants adhered to these better publicised strategies for cardiovascular health, relatively few seemed to benefit from consumption of soy-based products. Three servings of soy products per day significantly reduces total cholesterol, LDL cholesterol, triglycerides and cardiovascular risk.²³ Animal experiments suggest that both phytoestrogens and soy protein may be largely responsible for this effect.²⁴ Current thinking suggests that phytoestrogens may affect the development of heart disease by reducing both blood lipids and inflammation.²⁵ Chiropractic patients, especially those who, like the 27% in this study consider themselves at risk of heart disease, may appreciate being informed of such *avant-garde* dietary measures. As it has been reported that weight stability after 50 years of age is associated with better health than is either weight gain or loss,²⁶ such dietary modifications may provide an important avenue of health promotion in older persons.

Despite some reservations about substantial weight reduction in older persons, approximation of ideal body weight remains desirable. Weight loss of as little as 4 or 5 kg may normalise blood pressure.²⁸ Persons with a BMI of over 25 kg/m², by losing 5 kg (2 BMI units), reduced their later onset of knee osteoarthritis by 50% if female, or 25% if male.²⁸ On the other hand, weight increases greater than 10 kg after 18 years of age are associated with an increased mortality.²⁹ Obesity has been linked to an increased risk of Type 2 diabetes mellitus, hypertension, dyslipidemia, and certain types of cancer.³⁰

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In this study, 70% of participants had had their blood pressure assessed, 61% had had a blood cholesterol test, and 50% had been screened for diabetes mellitus. Periodic health examination schedules recommend that all adults should be screened for elevated serum cholesterol levels, obesity and hypertension.³¹ With respect to cancer screening, 85% of female participants had had a Pap smear, 67% had had a breast examination, 47% had had mammography and 96% of these were over the age of 40 years. Health authorities recommend that all sexually active women aged 18 and older should have Pap smears, and breast examination is recommended between 20-50 years of age, with mammography advocated for high-risk patients under the age of 50 years and for all women over 50 years of age.³² Although screening for prostate cancer is not included in periodic health examination schedules, 26% of male participants reported having been screened. On the other hand, only 8% of the total sample had had a faecal occult blood test, and 88% of these were over the age of 50 years. An equal number of males and females had been tested. Health authorities recommend annual faecal occult blood tests in asymptomatic patients over the age of 50 years.^{33,34} The "Western" dietary pattern, with its higher body mass index, larger intake of total energy and dietary cholesterol, is associated with an increased risk of colon cancer in both men and women.³⁵ On the other hand, vigorous leisure-time activity, smaller body size, and higher intakes of dietary fibre and folate can be protective. Chiropractors may wish to alert their patients to the dietary risks associated with this prevalent disease and encourage patients to avail themselves of dietary and other protective measures.

CONCLUSIONS

While overall trends do suggest that chiropractic patients are health conscious, individual differences make it necessary to evaluate each patient. While community education may suffice to make patients aware of long established health promotion guidelines, patients may benefit if their chiropractors critically appraised and made them aware of the more reputable current trends. Health promotion, like management, requires that individual needs are assessed in the clinical encounter. While statistical probability may be useful for determining community trends, the individual patient remains the unit of measurement and decision-making in clinical practice.

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