

A retrospective demographic study at the Calgary Urban Project Society: chiropractic service delivery beyond “upper-middle class”

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The segments of society that suffer the greatest musculoskeletal disability tend to be the lower income groups^{1,2,3} and yet little has been written about their use of chiropractic care. This one year retrospective study was intended to gain insight into chiropractic service utilization within this low-income bracket by examining the demographics of users of chiropractic care at Calgary Urban Project Society (CUPS) Health Clinic. From July 1, 1997 to June 30, 1998 six hours of volunteer chiropractic services per week were provided at CUPS and utilization data was abstracted from these files. The results of the study include the fact that 988 chiropractic treatments were rendered to 183 individuals (67% men, 33% women) exclusively for musculoskeletal concerns. The average number of visits per individual was 5.4 (sd = 7.6). Broken down by gender women made 7.1 (sd = 9.3) visits, and men 4.6 (sd = 6.6) visits. Most did not fill in the “occupation section” and only a third of those who responded were in labour positions. The number of treatments rendered without any remuneration from Alberta Health Care (ABHC) totalled to 420–47 treatments were to out of province claimants, 36 to those with no health care coverage whatsoever and the rest, 337 to those who claimed to have an ABHC number. (JCCA 2001; 45(4):241–247)

KEY WORDS: Chiropractic, manual manipulation, low income population (poverty), demographics, utilization.

Les segments de population qui souffrent le plus de problèmes squeletto-musculaires ont tendance à correspondre aux couches aux groupes à faible revenu^{1,2,3} et pourtant, le recours de ces tranches de la population aux soins de chiropractie n’a pas fait l’objet de nombreuses études. L’étude rétrospective qui a été menée cette année visait à observer l’utilisation des services de chiropractie au sein de la catégorie de population à revenus modiques en examinant rétrospectivement les données démographiques relatives aux utilisateurs de soins de chiropractie à la Calgary Urban Project Society (CUPS) Health Clinic. Du 1^{er} juillet 1997 au 30 juin 1998, six heures hebdomadaires de services de chiropractie ont été offertes à titre bénévole à la CUPS et les données d’utilisation ont été extraites de ces dossiers. Les résultats de cette étude tiennent compte du fait que 988 soins de chiropractie ont été fournis à 183 personnes (67 % d’hommes, 33 % de femmes) uniquement pour des problèmes squeletto-musculaires. Le nombre moyen des visites par personne était de 5,4 (écart type = 7,6). Si l’on répartit ces données par sexe, on s’aperçoit que des femmes se sont rendues à 7,1 (écart type = 9,3) visites et les hommes à 4,6 (écart type = 6,6) visites. La plupart de ces personnes n’ont pas rempli la section réservée à la profession et seulement un tiers de celles qui ont répondu ont indiqué avoir un emploi. Alberta Health Care a offert gratuitement 420 soins, dont 47 à des demandeurs qui n’étaient pas de la province; parmi ceux-ci, 36 ne bénéficiaient d’aucune couverture de soins de santé ; les 337 soins restants ont été prodigués à ceux qui se prévalaient d’un numéro ABHC. (JACC 2001; 45(4):241–247)

MOTS CLÉS : chiropractie, manipulation manuelle, population à faible revenu (pauvreté), données démographiques, utilisation.

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Introduction

The literature indicates that there is an inverse relationship between income bracket and degree of musculoskeletal disability in that income bracket.^{1,2,3} Badley and Ibanez² reported that all disability including musculoskeletal disability is associated with lower levels of schooling, lower income bracket, unemployment and rising age. Also, Statistics Canada³ reported that income inadequacy and rising age are highly related to activity limitations and that the most common reason for activity limitations are musculoskeletal in origin. Interestingly, Statistics Canada also reported that despite an increase in incidence of musculoskeletal disorders with falling income, low back problems (which are the single most important cause of underlying long term activity limitations³) occurred fairly evenly over all segments of the population studied. Finally, Manga et al.¹ concluded that even though the prevalence of neuromusculoskeletal conditions is highest amongst lower and lower-middle income groups and the elderly, these groups are low users of chiropractic mainly due to the deterrent effect of high co-payments or user fees.

According to the literature, the demographics of the “typical” user of chiropractic are quite distinct from the demographics of the population sub-group that suffers the most musculoskeletal disability. Utilization and demographic data specific to chiropractic utilization in Alberta⁴ revealed that 25% of the respondents surveyed recall visiting a chiropractor within the last year, and 55% recall visiting a chiropractor at least once. Females were more likely than males to visit their chiropractor and respondents with annual household income of \$60 000 or \$80 000 were also more likely to have visited a chiropractor in the past twelve months (34% vs 20% to 26%).⁴ Hurwitz et al.⁵ found that chiropractic patients were primarily “middle aged, married and with a slight preponderance of women”. Finally Millar⁶ noted that the use of alternative health care, which included chiropractic care was most prevalent among women, persons aged 45–64 and in higher income groups. Only one study was found to conclude that education, gender and income were independent patient factors predicting chiropractic use.⁷ It is however important to note that this study focused on care for back pain only and looked exclusively at American data.

Currently there is limited data on the utilization of chiropractic care in a multidisciplinary setting where co-pay-

ments are not required. This study was intended to gain insight into the utilization of chiropractic services in the segment of society that is in a low-income bracket by retrospectively examining the demographics of chiropractic patients at the Calgary Urban Project Society Health Clinic. It is hoped that this data can provide information to various stakeholders in the health care environment, including funding agencies (government and insurance companies), professional bodies (professional associations) and the Canadian public who pay for health care through taxes and co-payments. Therefore, this study provides a description of the utilization of chiropractic care by low-income bracket individuals in Calgary. The data collected in this study, include number of total treatments provided, number of individuals treated, gender, treatment frequency, type of complaint (musculoskeletal or non-musculoskeletal), occupation and whether the treatment was partially covered under Alberta Health Care (ABHC).

Setting

The data for this study was collected at the Calgary Urban Project Society (CUPS). CUPS is a not for profit institution which aims at meeting the needs of the lower income segments of society, including the homeless through a number of programs such as a health clinic, an outreach program for mobile crisis care and a referral program that addresses basic needs such as clothing and shelter. The health care team at CUPS consists of both voluntary and paid health care providers. Chiropractors and dentists provide services on a voluntary basis whereas the nurses, medical doctors, and councilors are paid either by salary or an hourly rate. The reason for stating this distinction in compensation between MD's and chiropractors is that some health agencies provide funding to professionals and organizations based on the utilization rate of the segments they serve. If visits to the chiropractor do not count in their utilization data then there may be a disincentive to refer or direct patients to a chiropractor and subsequently affect utilization rates. At this time the author is unaware of the specifics of funding for the health care facility at CUPS.

Typically six hours of chiropractic care per week over three days is provided by chiropractors at CUPS. The volunteer chiropractors provide full chiropractic services to the patients at the CUPS centre. These services include diagnosis, examination, x-ray requisition, chiropractic adjustments, soft tissue therapy, minimal nutritional

counseling (“minimal” due to financial constraints of the patients), exercises and stretches. Finally, during the span of this study, two of the three chiropractors at the facility used manual chiropractic adjustments exclusively, and the third chiropractor self reported using a manually assisted device (Activator) less than 15% of the time.

Data from the CUPS Annual Report⁸ indicate that the users of the referral program (66% no income, 19% employed, 15% social assistance) and the outreach program (20% employed, 38% no income, 15% social assistance, 27% other) are amongst the lowest income groups in society. Likely this is the same segment of society that the health clinic at CUPS also serves and it can therefore be said with some degree of confidence that the health centre at CUPS treats the lowest and lower income segments of society.

The setting at CUPS is unique in another way as well. According to Papadopoulos,⁹ only a small fraction of chiropractors in active practice work in any type of institutional setting (2.8%) and only 0.8% are actually in a non-educational, non-hospital institutional setting like CUPS, with most chiropractors working in a private setting. Observing trends in a setting like CUPS might provide insight into chiropractic utilization that would not be apparent in private practice because of the unique segments of society that CUPS serves.

Chiropractic care in Alberta is a partially insured service. Starting July 1st of each year, ABHC allots \$200 for chiropractic care to the each individual with coverage. Each time they see a chiropractor, they use up \$12.66 of this \$200. Once the full \$200 is utilized, no more funding is available to cover the cost of the partial payment for care. In private practice, in addition to charging ABHC, chiropractors balance bill. Balance billing is the practice of billing the patients as well as billing ABHC or any other insurer. Once the \$200 allotment from ABHC is used up, patients are often expected to cover some, if not all of the ABHC portion of the bill. At CUPS, however, the chiropractors do not balance bill or provide care for Workers Compensation Board (WCB) or Motor Vehicle Accident (MVA) cases. The mandate at CUPS is to provide care to those who could not afford care elsewhere. WCB patients were turned away because the clinic is not an authorized facility. In Alberta, for MVA cases many chiropractors will bill directly to the insurer making balance billing to the patient unnecessary. As a result, these

individuals have a number of options available to them outside the CUPS facility.

Methods

From July 1, 1997 to June 30, 1998 information was abstracted from the files of every person treated by a chiropractor. As mentioned previously, weekly chiropractic care at CUPS was provided by volunteer chiropractors for 2 hours a day, 3 days per week over this time frame. For the first 3 months of the study 4 chiropractors treated patients at CUPS. For the remainder of the 9 months, 3 chiropractors treated patients at CUPS (1 from the original group of 4 chiropractors and 2 new chiropractors). Standard forms were used and these files were held at the CUPS health clinic. The receptionist recorded the names of the patients who saw the chiropractor. Patients do not have to be referred to the clinic, and care was provided on a walk-in basis. All the dates for this study were chosen to coincide with the funding period for Alberta Health Care (ABHC).

Number of visits, age, gender, complaint (neuromusculoskeletal or non-neuromusculoskeletal), occupation, and type of health care coverage (Alberta Health Care, other provincial health care or no health care coverage) was collected from the initial intake and treatment forms. The type of complaint was categorized as either neuromusculoskeletal or non-neuromusculoskeletal. Neuromusculoskeletal conditions included headaches (tension, cervicogenic and migraine), mechanical upper, mid and lower back pain, sprains and strains of joints including repetitive strain injuries, and disc herniations. Organic and visceral complaints were not included in this category.

The final piece of data collected for each patient; was whether partial remuneration was received for care at the facility. This was collected by each chiropractor at CUPS that submitted billing information to ABHC. This information was then submitted to the author who then compiled the data. To find the number of treatments that no partial remuneration was received, the number of visits partial remuneration was received for was subtracted from the total number of visits. Even if patients said they did not have Alberta Health Care, for at least 10 out of the 12 months during the period of the study, the chiropractors would call Alberta Health Care to verify this information. Sometimes it turned out that the patient did in fact have health coverage. Once the data was gathered, all identify-

ing data was destroyed to maintain ethical considerations and confidentiality of the clients at CUPS. The main statistical procedures performed on the data were frequency counts, mean or average, and standard deviations.

Results

From Table 1, it can be seen that 988 treatments were rendered to 183 individuals. The average number of visits per person at CUPS was 5.4 (sd = 7.6) or broken down by gender 4.6 (sd = 6.6) for men and 7.1 (sd = 9.3) for women. From Figure 1, the mode number of visits for both men and women was one. These utilization rates are low compared to findings of Hurwitz et al. (average number of visits was 9.6 per year, standard error = 0.5).⁵ The large differences between the mean and modal number of visits of the CUPS data suggest that a small proportion of patients who are frequent or long-term users of chiropractic services cause the distributions of visits to be skewed to the right. Hurwitz et al. also found this skew to the right in their study.⁵

Table 2 shows that of the 988 treatments rendered, 568 were partially paid for by ABHC and the remaining 420 treatments were donated completely. Of the 420 treatments donated completely (Table 2) 11.2% of these treatments were donated to residents with provincial health care from a province other than Alberta, and 8.6% to those with no health care coverage, with the vast majority donated to those who had an ABHC number (80.2%). The chiropractors were remunerated for 2% of the total services rendered to those who had out of province healthcare coverage (Table 2). Compared to the gender ratio of the entire population studied (1/3 women, 2/3 men), there were proportionately fewer women who had health care coverage from a province other than Alberta (5.0%), suggesting proportionally more men from other provinces utilize the facilities (Table 3). Perhaps more men are likely to move from province to province. Interestingly there were proportionately more women who had no health coverage

what so ever, that is, 41% of all CUPS patients who had no coverage were women (Table 3).

Every patient who saw the chiropractor came for a neuromusculoskeletal (NMSK) complaint. As mentioned previously if a patient came in with both a neuromusculoskeletal complaint and a non-neuromusculoskeletal complaint and were treated for both, then only the neuromusculoskeletal category only was tallied.

Not all patients filled out the information on occupation (see Table 4); only 64 of the 189 filled out this information. Of this 64, 26 could be classified as laborers (construction workers, and movers), 7 were students, 6 were unemployed, 4 were drivers, 2 reported being on social assistance, one of whom specifically indicated assistance from AISH. AISH stands for "Assured Income for the Severely Handicapped" and is a provincial assistance program for the physically or mentally handicapped whose disability leaves them unable to work. The students were generally adult students upgrading high school or attending vocational programs often on a part-time basis. The remaining 19 who filled out the occupation section fell into miscellaneous categories ranging from cashier to hairstylists and cooks. Because roughly 1/3 responded to the occupation question, results may not represent the entire population of CUPS. Also the occupation section on the intake form did not include a question asking how long the person worked in their present job. Casual work may have been classified as "employment" and consequently it would be a mistake to interpret the "employed" category as meaning full time employment for any extended period of time. From the data collected it appears that at least 49 of the 64 or 77% that filled out the occupation section were employed. This is in contradiction with the data collected on the users of the Outreach Program and Referral Program at CUPS, which reported employment rates of 20% and 19% respectively.⁸

Table 1

	Men	Women	Total
Total number of patients	123 (67%)	60 (33%)	183
Total number of treatments	563 (57%)	425 (43%)	988
Average number of treatments (sd)	4.6 (6.6)	7.1 (9.3)	5.4 (7.6)
Average age (sd)	38.1 (10)	37.0 (9.7)	37.8 (10.4)

Table 2 Utilization data comparing recipients with ABHC coverage with those without coverage

Data for Both Genders	Alberta Health Care	Out of Province Care	No Health Coverage	Without Alberta Health Care Total	Grand Total
No. of patients (% of total)	140 (76.5%)	26 (14.2%)	17 (9.3%)	43 (23.5%)	183 (100%)
Ave. age yrs(sd)	39.04 (10.3)	33.69 (8.8)	34.18 (11.4)	33.88 (9.8)	37.83 (10.4)
No. of paid visits (% of total)	567 (99.8%)	1 (0.2%)	0 (0%)	1 (0.2%)	568 (100%)
Ave. No. of paid visits (sd)	4 (4.8)	0 (0.2)	0 (0.0)	0 (0.2)	3 (4.5)
No. of unpaid visits (% of total)	337 (80.2%)	47 (11.2%)	36 (8.6%)	83 (19.8%)	420 (100%)
Ave. No. of unpaid (sd)	2 (5.0)	2 (1.4)	2 (1.9)	2 (1.6)	2 (4.4)
Total No. of Visits (% of total)	904 (91.5%)	48 (4.9%)	36 (3.6%)	84 (8.5%)	988 (100%)
Ave. No. of visits (sd)	6.5 (8.4)	1.8 (1.3)	2.1(1.9)	2.0(1.6)	5.4 (7.6)

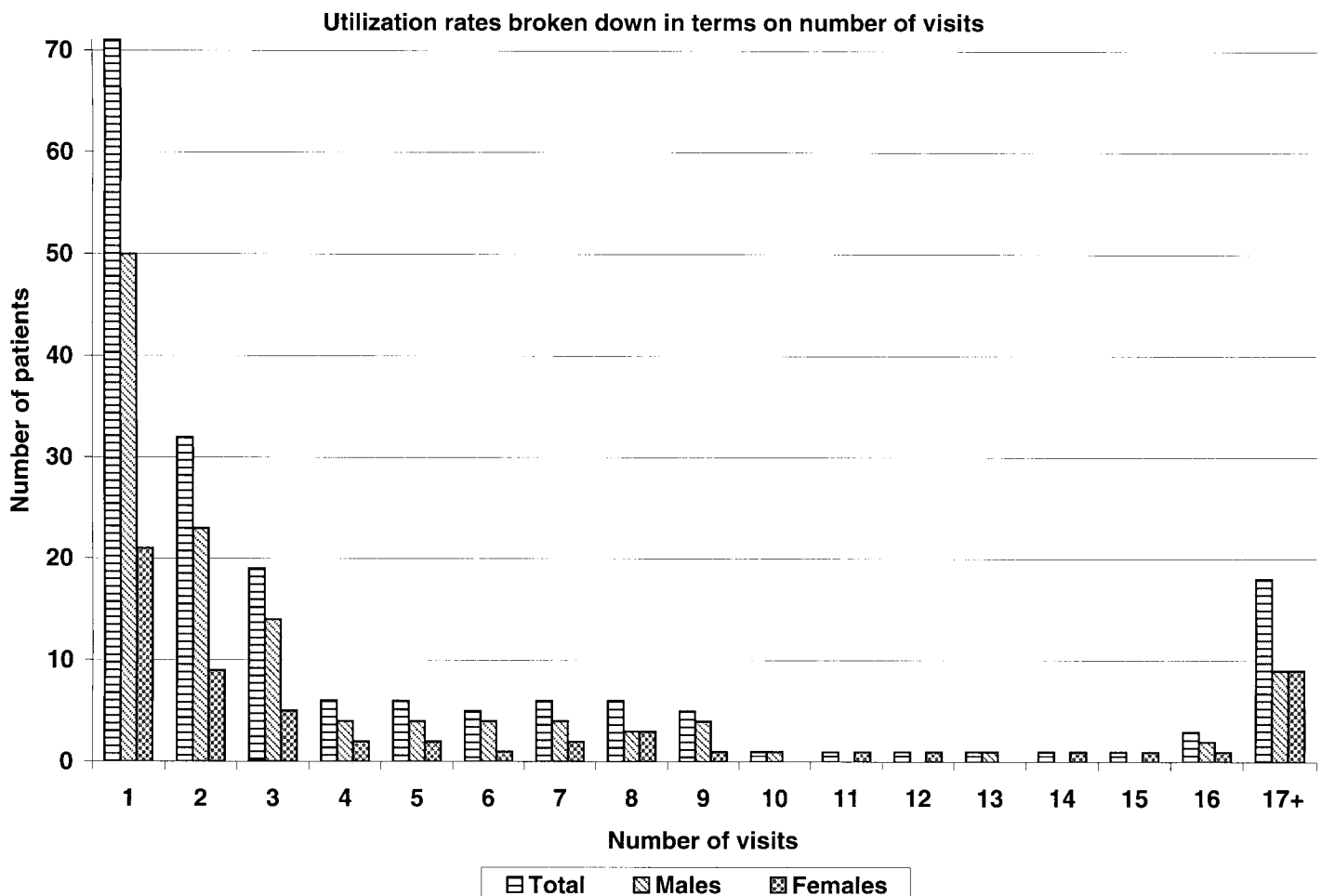
Figure 1 Visit frequency broken down by gender

Table 3 Utilization, demographic and health coverage for each gender

Coverage Data for Males and Females	Females				Males				Grand Total
	Without Alberta Health Care			Total	Without Alberta Health Care			Total	
	Alberta Health Care	Out of province health care	No Health Coverage		Alberta Health Care	Out of province health care	No Health Coverage		
No. of patients (% of total)	50 (27.3%)	3 (1.6%)	7 (3.8%)	60 (32.8%)	90 (49.2%)	23 (12.6%)	10 (5.5%)	123 (67.2%)	
Ave. age yrs(sd)	38.3 (9.0)	27.3 (8.3)	32.3 (12.3)	37.1 (9.7)	39.4 (10.9)	34.5 (8.7)	35.5 (11.3)	38.2 (10.7)	
No. of paid visits (% of total)	240 (42.3%)	0 (0%)	0 (0%)	240 (42.3%)	327 (57.6%)	1 (0.2%)	0 (0%)	328 57.7%	
Ave. No. of paid visits (sd)	5 (5.4)	0 (0.0)	0 (0.0)	4 (5.2)	4 (4.5)	0 (0.2)	0 (0.0)	3 (4.1)	
No. of unpaid visits (% of total)	160 (38.1%)	6 (1.4%)	19 (4.5%)	185 (44.0%)	177 (42.1%)	41 (9.8%)	17 (4.0%)	235 (56.0%)	
Ave. No. of unpaid visits (sd)	3 (6.7)	2 (1.0)	3 (2.9)	3 (6.2)	2 (3.7)	2 (1.4)	2 (0.8)	2 (3.3)	
Total No. of Visits (% of total)	400 (40.5%)	6 (0.6%)	19 (1.9%)	425 (43.0%)	504 (51.0%)	42 (4.3%)	17 (1.7%)	563 (57.0%)	
Ave. No. of visits (sd)	8.0 (9.9)	2.0 (1.0)	2.7 (2.9)	7.1 (9.3)	5.6 (7.4)	1.8 (1.4)	1.7 (0.8)	4.6 (6.6)	

Discussion

Unlike demographics in private practice, the overwhelming majority of users of chiropractic in the CUPS setting are men. A gender analysis of the users of the health care at CUPS (for nurses and MD's) in two sample months, February 1999 and August 2000, also showed a gender bias in utilization with 66.9% and 67.8% of the consumers being men. Consequently this gender bias in the utilization of chiropractic services is typical of the CUPS setting and not specific for chiropractic care. Despite this overwhelming 2/3 male bias in terms of demographics, when it came to the gender break-down of actual number of visits, women sought care more frequently than men and this bias narrowed to 14%.

Most clients came in to see chiropractors at CUPS for

just one visit. Further studies need to examine reasons for such poor compliance. For example is such compliance specific for chiropractic care or is it typical for the segment of society or are there other factors involved.

At the other end of the spectrum 18 out of 183 or 9.3% of the population came in for chiropractic care more than 16 times. ABHC only partially covers up to 16 visits. Of the 420 visits donated entirely, the majority (337) were donated to those with an ABHC number. This discrepancy may be due to a number of reasons; just because they came in to CUPS does not mean patients did not seek care elsewhere, either prior or during the time they sought care at CUPS. Consequently some patients may have used up their health care allotment before they had 16 visits at CUPS. Also patients may have only had ABHC coverage for part of the year, so even if they had an ABHC number it may have not been valid for the purposes of billing for chiropractic care when care was sought. Perhaps future studies may better examine this discrepancy.

In private practice, most Canadians who visit chiropractors do so for musculoskeletal concerns.¹⁰ Hurwitz et al.⁵ looked at Canadian and American findings and found only a small percentage of people came in for non-neuromusculoskeletal complaints. The users of CUPS came to chiropractors exclusively for musculoskeletal complaints. However because of the method of categorizing the chief complaint, the number of non-musculoskeletal injuries may be under reported and as a result may at least partially account for this.

While the study attempts to collect demographic information on the users of chiropractic care there are a number

Table 4 Occupation Breakdown

Occupation	Number	% of total
Laborer	26	14%
Student	7	4%
Unemployed	6	3%
Driver	4	2%
Social services	2	1%
Other	19	10%
Not reported	125	66%
Total	189	100%

of factors that limited the results. As with many retrospective studies there is a lack of control over the collection of some data. Information on whether remuneration was received for care provided was self reported by a number of chiropractors. Also information was extracted from patient intake forms some time after the forms were filled out and as a result the "occupation" section was often left blank. Both allow for some error. The biggest limitation of this study is that economic data on the CUPS patients was not available. Therefore, it was assumed that the demographic data from the CUPS annual report is correct and is representative of the chiropractic patients at the CUPS health clinic. Future prospective studies would do well in gathering economic information on a patient intake sheet where patients can simply check off boxes regarding income status.

Musculoskeletal disorders are amongst the most important reasons for activity limitations and short-term disability.¹ Musculoskeletal disorders and injuries are the second and third most costly categories of health problems in economic burden of illness studies.¹ They also rank first in prevalence in chronic problems and first as a cause of long-term disability.¹ Focus group discussions including the clients at CUPS have recommended having access to chiropractors every day instead of just 3 days a week. If the majority of the users of chiropractic care at CUPS belong to a segment of the population that suffers the greatest degree of musculoskeletal disability a question for further study might be to examine whether providing chiropractic care only 3 times a week for 2 hours per session is adequate.

Conclusion

This study was done in response to the lack of data on utilization of chiropractic care within a multidisciplinary setting where care is provided regardless of the patients' ability to pay. Data was collected retrospectively on patients who sought care from chiropractors at the Calgary Urban Project Society over a one year period (July 1, 1997 to June 30, 1998). Over this period, 988 treatments were rendered to 183 individuals, 33% per cent of those treated were women with 67% being men. The average treatment frequency was 5.4 (sd = 7.6) treatments. Broken down by gender women made 7.1 (sd = 9.3) visits, and men 4.6 (sd = 6.6) visits. The average age was 37.8 (sd = 10.4). The only reason they sought care from a chiropractor was for

neuromusculoskeletal complaints. The most common occupation was that of a laborer, however these findings can not be said to represent the entire population since the majority of participants in this study did not fill out the occupation section. Of the 988 treatments rendered, 568 were partially covered under Alberta Health Care. The remaining 420 were donated entirely. There were a number of limitations of this study that future work could address, such as excluding MVA and WCB patients and no means of verifying the economic status of the consumers of chiropractic care in the CUPS clinic. Further studies could also evaluate the demand and adequacy of existing services. It is also hoped that further prospective studies may be conducted in an attempt to answer some of the questions raised in this study.

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