ANALYSIS OF CO-PATHOLOGIES IN 1000 PATIENTS ATTENDING AN OSTEOPATHIC TEACHING CLINIC

(c) 2004 Victoria University

ANALYSIS OF CO-PATHOLOGIES IN 1000 PATIENTS ATTENDING AN OSTEOPATHIC TEACHING CLINIC

Jelena Blajer (BSc)

Dr.Jim Kiatos MB. BS

Victoria University
City Campus, PO Box 14428, MGMC
Melbourne, Victoria
Australia, 8001
jim.kiatos@vu.edu.au
(03) 9248 1191

(c) 2004 Victoria University

ABSTRACT

Background: Osteopaths primarily treat musculoskeletal disorders, but as primary health care providers, also need to diagnose and recognise co-pathologies, and understand the implications any past conditions may have on a patient's present complaint. These conditions may affect the patients' presenting complaint, and consequently influence the type and effectiveness of osteopathic treatment given, but may also have important safety implications of their own.

Objectives: The current study aims to investigate the types and frequency of co-pathologies and signs and symptoms of possible co-pathologies seen by students in a teaching clinic, and to relate those to known national averages. Thus initiate a process of exploration that will ultimately help students and educators gain a broader understanding of patient demographics and the most common co-pathologies seen by student osteopaths.

Methods: A random sample of 1000 current Victoria University student clinic patient files was taken and data was collected retrospectively. The data recorded from the patient files included; age, sex, presenting complaint and diagnosed co-pathologies. Data on previously occurring conditions was obtained from the past history section of the case history forms. Of particular interest was the frequency with which conditions were displayed in the data, and the nature of those conditions, especially those that may have had a bearing on the patient's current condition or the possible safety of treatment.

(c) 2004 Victoria University

Results: The most common co-pathologies identified were myopia (17.7%), and asthma (13.9%), while the most common undiagnosed signs and symptoms were stress (27.3%), and dizziness (9.2%). The frequency of degenerative changes, such as the arthritides (1.35%) found was poorly represented.

Conclusions: Osteopaths predominantly treat patients with musculoskeletal problems, however most patients we see will also have at least one co-pathology present in their medical history, demonstrating the need for an increased public awareness of the potential for Osteopaths to play a part in patients' general healthcare. The patterns identified generally corresponded with the trends identified in the known national averages. Students need to have greater exposure to the conditions that were not commonly identified in the current study but common in the wider community, such as arthritides. Co-pathologies can influence a patient's musculoskeletal complaint, as well as the type and efficacy of osteopathic treatment. Therefore it is important that students and educators alike are aware of the prevalent co-pathologies so that the curriculum is tailored to include these conditions, so that graduates are better prepared for life in private practice.

(c) 2004 Victoria University

Key indexing terms:

Osteopathy, co-pathology, signs and symptoms, teaching clinic

Key terms:

Co-pathology: A second diagnosable or pre-diagnosed condition existing at the same time, or independent to, the main presenting complaint. The patient may have recovered from this, or it may also exist at the time of osteopathic treatment.

Signs and symptoms: For the purposes of this study, signs and symptoms described by the patient which had not been investigated or diagnosed were taken as possible indicators of co-pathologies, though obviously the nature of these could not be confirmed.

(c) 2004 Victoria University

INTRODUCTION

The main emphasis of osteopathy is on the diagnosis and treatment of structural and functional problems of the body via the musculo-skeletal system. Osteopathy is often used as a substitute or adjunct to the general medical treatment of musculoskeletal disorders.[1] However, as legally recognized primary health care providers, osteopaths must also be trained to diagnose, treat (if possible), and to refer or follow-up specific health problems.[2] Therefore, osteopaths do not just treat musculoskeletal disorders but also need to be able to understand the implications of their treatment on any diagnosed co-pathologies, signs and symptoms that may indicate or lead to co-pathologies. For example, a patient with a long history of smoking presenting to an Osteopath with thoracic pain, a cough, wheezing, haemoptysis and dyspnoea may indicate the presence of lung cancer.[3]

(c) 2004 Victoria University

Osteopaths also need to be able to understand the implications of any previously occurring conditions may have in relation to a patient's present complaint. For example, a patient with a previous medical history of left-sided breast cancer presenting for treatment of left-sided shoulder pain. The patient may be presenting with symptoms of extension of the tumour into the brachial plexus or upper ribs (Pancoast's syndrome) or bone or neurological metastasis that have developed and thus brought the patient in to see the Osteopath.[3] Also, the possibility of the recurrence of conditions which may potentially affect the safety of osteopathic treatment and contraindicate the use of certain

treatment techniques, such as high velocity low amplitude (HVLA) technique on the upper cervical segments of a patient with severe rheumatoid arthritis. [4]

Osteopaths are exposed to patients with a variety of problems and conditions; therefore it is imperative that they have good diagnostic skills to identify any undiagnosed conditions not only as a duty of care but also because most diseases afford a better prognosis if diagnosed earlier.[5] Good diagnostic skills develop from sound clinical and theoretical training. However no information currently exists regarding the type and frequency of co-pathologies presenting to osteopathic students. Therefore, educators require this information to form a more clinically relevant curriculum which includes the main co-pathologies seen by students in the teaching clinic.

(c) 2004 Victoria University

The use of demographic and epidemiological information on the developing practice of osteopathy is important for both students and educators. Such information allows students to evaluate whether their theoretical training is reflective of the types of patients they will encounter in the teaching clinic.[6] Educators also gain from such information as it aids curriculum development and helps ensure that the theoretical and practical information taught is reflective of what students will be exposed to whilst treating patients in the teaching clinic.

Clinical education is an integral component of undergraduate osteopathic education. As students enter their final years of study, their clinical exposure is increased accordingly, allowing them to put the theoretical framework of their curriculum into a practical

context. Osteopathic teaching clinics provide an important learning environment for students, provided they accurately reflect practice experiences. By investigating whether the range of co-pathologies seen in the teaching clinic is representative of the conditions found in the general population, educators will have a more accurate reflection of the co-pathologies that need to be taught within the curriculum.

The key form of clinical exposure that the teaching clinic provides is for the diagnosis and treatment of 'osteopathic' (i.e. mostly musculoskeletal) conditions.[7] Consequently, osteopathic courses have a solid curricular emphasis on musculoskeletal conditions.[7-9] An important consideration is that many patients also have co-pathologies which may either related to or independent of their presenting complaint (i.e. the problem they are seeking treatment for). These diseases, their complications, and treatment (such as medication), may affect or interact with the patients' presenting complaint and consequently may influence the type and effectiveness of osteopathic treatment. By studying the type and frequency of co-pathologies that occur in patients is important information to document as these co-pathologies can potentially influence the patient's current health and therefore their presenting complaint.

(c) 2004 Victoria University

Students require appropriate theoretical and clinical knowledge so that the appropriate management of their patient can occur. However, no studies have ever considered what co-pathologies patients presenting to osteopaths have in addition to their presenting complaint. Consequently, it is unknown whether osteopathic students have had the

theoretical and clinical preparation that will enable them to effectively manage patients with various co-pathologies they will encounter.

Robertson et al[10] argued that all educational initiatives must be constantly reviewed, refined and improved on the basis of ongoing curriculum evaluation. Therefore, information regarding the type and frequency of co-pathologies present will be a useful tool to inform curriculum development and possible future postgraduate courses to help increase knowledge in areas that may be lacking in the current curriculum.

A study by Hunt et al[11] looked at university education and the physiotherapy profession and found that there is an increasing expectation of the community that physiotherapy graduates are highly competent practitioners and primary health care providers. This expectation may be extended to osteopaths, who are also legally classed as primary health care providers and treat similar conditions to physiotherapists. The growth and development of osteopathy as a profession may be influenced by the professional abilities and potential of its new graduates. It is expected they have comprehensive skills to understand the human body, disease processes that may affect it, differential diagnosis, treatment and management of a variety of diseases and conditions.[11] Thus, as musculoskeletal therapists, it is expected that osteopaths are competent to diagnose, and / or treat people with a wide range of complaints.

(c) 2004 Victoria University

There are studies of numerous private and teaching osteopathic clinics from around the world that have documented and analysed their patients' demographics and presenting

complaints. [1, 12-15] The information provided by these studies includes age, sex, occupation, height and weight of patients, site of complaint, presenting complaints/symptoms, techniques used to treat, and method of referral. None of these studies have considered the co-pathologies seen by osteopaths, either in private practice or teaching clinics, so it is difficult to see whether the current curricula provide students with the appropriate skills and knowledge that they require.

The orthodox medical profession is changing its view of alternative medicine and see it as possibly being complementary to orthodox care. [16] North et al[14] report that general practitioners (GPs) are increasingly prepared to refer patients with certain medical conditions to allied health professionals such as osteopaths. This suggests that increased referrals from general practitioners means increased likelihood of patients presenting to osteopaths with co-pathologies. Further, in May 2004 the Australian Government introduced '*Medicare Plus,'* and included osteopaths in the list of allied health professionals that general practitioners (GP's) could refer to for the care of patients with complex problems.[17] This is a clear indication that osteopaths are becoming accepted into mainstream health care and are moving from a marginal alternative form of healing to more conventional medicine.

(c) 2004 Victoria University

Recent developments such as the inclusion of osteopaths into Medicare Plus, imply that osteopaths will possibly see an increasing number of patients with pre-diagnosed or undiagnosed pathologies. In turn, this further strengthens the need for information

regarding the type and frequency of co-pathologies occurring in osteopathic patients to ensure the curriculum is preparing osteopathic graduates adequately.

The current study sought to record the type and frequency with which patients attending the Victoria University Osteopathic Medicine Clinic reported diagnosed co-pathologies, and signs and symptoms that may indicate the presence of co-pathologies. Further, to investigate whether the range of co-pathologies seen in the teaching clinic is representative of the conditions found in the general population. It also aimed to initiate a process of exploration that will ultimately assist students and educators to gain a broader understanding of patient demographics and the most common co-pathologies seen by student osteopaths.

(c) 2004 Victoria University

METHOD AND MATERIALS

Data Collection

This study was carried out at the Victoria University Osteopathic Medicine Clinic, Melbourne, Australia, which is the osteopathic teaching clinic for students enrolled in the osteopathy course (Bachelor Clinical Science, Master of Health Sciences in Osteopathy) at Victoria University. It was recognised prior to commencement that there would be a selection bias in the age range the sample would contain, given that the clinic recruits a large number of patients from within the university community, leading to a greater preponderance of younger patients than might be expected in a non teaching clinic. However, the teaching clinic is the only place where osteopathy students can gain clinical experience prior to entering the workforce, thus making it an important sample to be investigated.

(c) 2004 Victoria University

A random sample of 1000 current student clinic patient files was taken and data was collected retrospectively. Only files that were active in the previous 12 months (2003-2004) were used. The data recorded from the patient files included; age, sex, presenting complaint (according to the site the patient reported as the reason for their consultation), diagnosed co-pathologies as recorded in the "systems review" section of the new patient history form e.g. cardiovascular; respiratory; gastrointestinal; reproductive; endocrine; optical/hearing/dental, etc. Data of particular interest was the frequency with which conditions were displayed in the data, and the nature of those conditions, especially those that may have had a bearing on the patient's current condition or the possible safety of treatment. Signs and symptoms relating to the various systems that patients complained

of were also included in the data recorded as often the histories did not actually record a specific pre-diagnosed disease but instead described symptoms and signs that the patients reported. It was assumed that these signs and symptoms might represent indications of possible undiagnosed co-pathologies.

The data was then recorded directly from the patient files onto the computer using Microsoft Excel 98. No patient identifiers were recorded, thus all data obtained remained completely anonymous. The Victoria University Human Research Ethics Committee approved procedures followed.

(c) 2004 Victoria University

Data Classification

The co-pathologies were pre-diagnosed conditions the patients were suffering from and were therefore not determined by the student treating them. The signs and symptoms were recorded from the systemic enquiry section of the history forms, and were classified according to the primary organ/system affected. Signs and symptoms taken as potentially significant were those listed on the case history form as being significant for each system. These were in turn derived from Murtagh's "General Practice."[18]

Data Analysis

The data was documented and compared using tables and graphs via simple descriptive statistics, including means, medians and percentages, using Microsoft Excel. Data analysis was based on a comparison of the proportions of age, gender, presenting complaint, co-pathologies according to specific organ system and signs/symptoms according to specific organ system.

RESULTS

Age

The mean age of patients in this study was 36 years (+/- 1.5 years), the median was 32 years and the mode was 23 years. The gender distribution of the patients was 55% female and 45% male.

Presenting Complaint

The presenting complaints were divided into spinal, upper and lower extremity and visceral problems. Spinal problems were defined as those with pain in the cervical, thoracic or lumbar regions, and also included the thoracolumbar (TL) junction and sacro-iliac joint (SIJ)/pelvis. As shown Table 1, low back pain (LBP) was the most common complaint, accounting for 25.3% of the presenting complaints. Cervical/neck pain (22.7%) was the second most common complaint. The least common presenting complaints applied to viscera (4%). Lower limb complaints (including hip, knee, foot/ankle) were slightly higher at 14% than upper limb complaints (including shoulder, elbow, wrist/hand), which accounted for 13%. Shoulder problems (9.2%) were the most common extremity complaint.

(c) 2004 Victoria University

Table 1: Presenting Complaint

Presenting Complaint	Frequency (N = 1000)
LBP	253
Cervical	227
Thoracic	109
Shoulder	92
HA	71
Knee	71
Hip	37
TL junction	23
SIJ/pelvis	19
Ankle	18
Wrist	17
Elbow	16
Rib	16
Foot	7
Thigh	7
TMJ	7
Hand	6
Visceral	4

(c) 2004 Victoria University

[1]Abbreviations used in Table 1

[1] LBP – Low back pain
HA – Headache
TL junction – Thoracolumbar junction
SIJ/pelvis – Sacroiliac joint/pelvis
TMJ – Temporomandibular joint

Prevalence of co-pathologies

978 of the 1000 patient files analysed included report of at least one co-pathology in the patient's current or previous medical history. Table 2 shows that there was a range from "no co-pathology" to "15 separate co-pathologies" in an individual patient (Note: This does not mean that they had all of these present at the one time, but was inclusive of the presence of diseases in their previous medical history). The majority (17.9%) of patients had 3 co-pathologies, while only 1.5% of patients had 14 co-pathologies.

(c) 2004
Victoria University

Table 2: Individual patients' total number of co-pathologies

Number of co-pathologies	0	1	2	**3**	4	5	6	7	8	9	10	11	12	13	14	15
Frequency (N = 1000)	22	172	166	**179**	25	89	36	43	50	18	45	38	33	28	15	41

(c) 2004 Victoria University

Co-pathologies according to organ

Table 3 demonstrates a summary of the main co-pathologies identified according to the classification system utilised. The main co-pathologies related to optical/dental/auditory diseases (17.94%), respiratory (13.36%), cardiovascular (12.14%), fracture/trauma (10.65%), infection (9.93%), gastrointestinal (9.80%). The least common groups identified related to obstetric (0.26%), rheumatologic (0.69%) and hereditary (0.03%) conditions.

(c) 2004
Victoria University

Table 3: Patient co-pathology summary

	Frequency of co-pathology (%)
Optic/dental/auditory	17.94
Respiratory system	13.36
Cardiovascular system	12.14
Trauma/fracture	10.65
Infection	9.93
Gastrointestinal system	9.80
Dermatological	5.87
Reproductive system	5.21
Psychological	3.43
Genitourinary system	3.30
Tumour	2.41
Arthritides	1.35
Bone pathology	1.25
Endocrine system	0.97
Neurological system	0.76
Rheumatologic	0.69
Obstetric	0.26
Hereditary	0.03

(c) 2004 Victoria University

Frequency of co-pathologies

Table 4 shows the percentage of the most common co-pathologies seen according to each category. Myopia (17.7%) accounted for the most common optic/dental/auditory co-pathologies, while the most common cardiovascular conditions identified were hypertension (10%), hypotension (6.7%) and hypercholesterolemia (5%). Asthma (13.9%) and upper respiratory tract infections (URTI, 8%) and hayfever/allergic rhinitis (7.8) were the predominant respiratory conditions. Varicella (10%), rubella (5.6%) and tonsillitis (5.4%) were the most common infections, while appendicitis (9.2%), irritable bowel syndrome (4.8%), were the most common gastrointestinal problems.

6.5% of patients identified depression as the most common psychological disorder they suffered from. Fibromyalgia syndrome (0.8%), chronic fatigue syndrome (0.7%) and rheumatoid arthritis (0.6%) were the most common rheumatologic disorders, while epilepsy (0.6%) and carpal tunnel syndrome (0.5%) were the most common neurological conditions. Osteoarthritis (2.5%) and gout (0.7%) were the most common arthritides found. The most frequently reported tumours were malignant melanoma (1.6%) and benign breast tumours (0.8%).

(c) 2004 Victoria University

Table 4: Most common co-pathologies according to specific organ/system

Organ/System	Most common co-pathologies	Frequency (%)	Co-pathologies reported after the most common (%)
Optic/dental/auditory	Myopia	17.7	Wisdom teeth (15), Glasses[2] (10.3), Hyperopia (3.6), Deafness (2.7)
Respiratory system	Asthma	13.9	Upper respiratory tract infection (URTI) (8), Hayfever/allergic rhinitis (7.8), Bronchitis (2.8), Sinusitis (2.8)
Cardiovascular system	Hypertension	10	Hypotension (6.7), Hypercholesterolemia (5), Varicose veins (3.2), Arrhythmia (3.1)
Infection	Varicella (chicken pox)	10	Rubella (5.6), Tonsillitis (5.4), Glandular fever (3.4), Mumps (1.2)
Gastrointestinal system	Appendicitis	9.2	Irritable bowel syndrome (4.8), Hernia (3.5), Food intolerance (2.8), Peptic ulcer (2)
Dermatological	Eczema	8	Psoriasis (2.7), Dermatitis (2.2), Acne (1.8), Tinea (0.5)
Psychological	Depression	6.5	Anxiety (1), Panic attacks (0.5), Anorexia Nervosa (0.5), Insomnia (0.4)
Reproductive system	Pregnancy	5.9	Menopause (4.2), Polycystic ovary (2.5), Endometriosis (1.1), Miscarriage (0.7)
Trauma/fracture	Whiplash	4.8	Radius (4.4), Metacarpal (3.1), Ulna (2.5), Nasal (2.2)
Genitourinary system	Urinary tract infection	3.2	Nephritis (7.1), Renal calculi (0.9), Benign Prostatic Hypertrophy (BPH) (0.8), Herpes simplex virus (HSV) (0.8)
Surgery	Tonsillectomy	3	Hysterectomy (2.3), Cholecystectomy (1.8), Abortion (1.2), Vasectomy (0.5)
Arthritides	Osteoarthritis	2.5	Gout (0.7), Juvenile rheumatoid arthritis (0.1), Psoriatic arthritis (0.1)
Tumour	Malignant melanoma	1.6	Benign breast tumour (0.8), Pre-cancerous cervical tumour (0.7), Basal cell carcinoma (0.6), Malignant breast tumour (0.5)
Haematological	Iron deficiency anaemia	1.3	Thalassemia (0.3), Thrombocytopenia (0.2), Pernicious anaemia (0.2)
Endocrine system	Type 2 diabetes mellitus	0.9	Hypothyroidism (0.8), Hyperthyroidism (0.3), Goitre (0.2), Thyroiditis (0.1)
Bone pathology	Osteoporosis	0.9	Osgood-Slatters disease (0.8), Scheuermann's disease (0.4), Scoliosis (0.4), Osteopenia (0.3)
Rheumatological	Fibromyalgia syndrome	0.8	Chronic fatigue (0.7), Rheumatoid arthritis (RA) (0.6), Ganglion (0.6)
Neurological system	Epilepsy	0.6	Carpal tunnel syndrome (0.5), Morton's neuroma (0.4), Multiple sclerosis (0.2), Bell's palsy (0.2)
Obstetric	Pre-eclampsia	0.5	Toxaemia (0.3)

(c) 2004 Victoria University

[2] 'Glasses' was recorded as details of why glasses were worn was omitted from patient history files

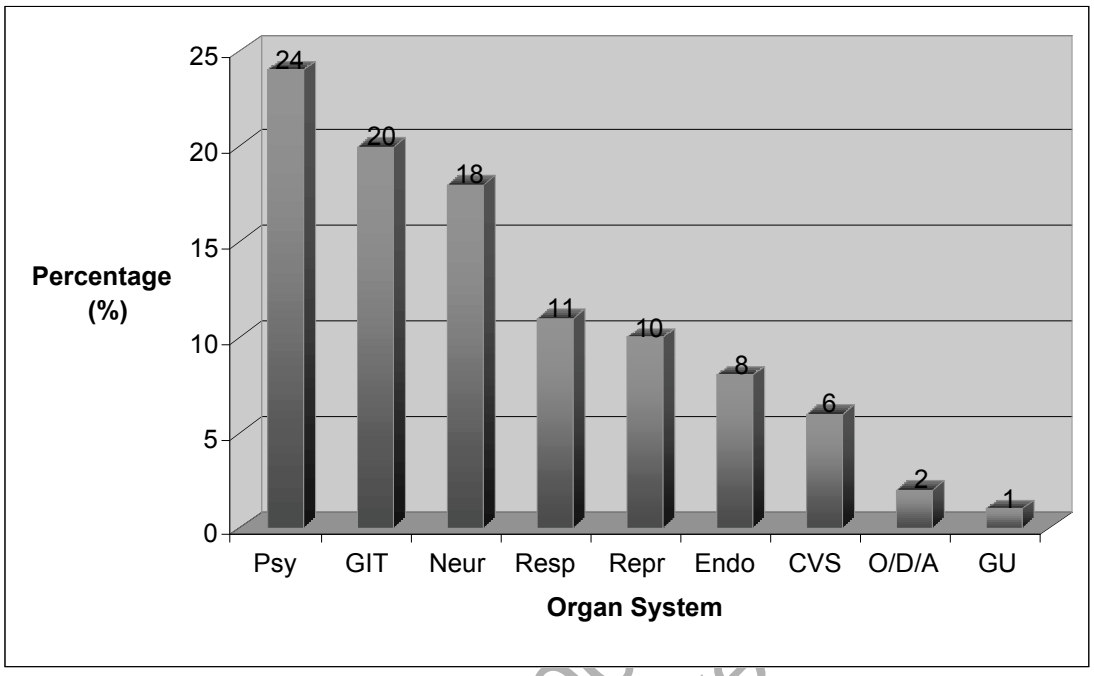
Frequency of reported undiagnosed signs and symptoms

As seen in Figure 1 the most common undiagnosed co-pathology signs and symptoms by system were psychological (24%), gastrointestinal (20%) and neurological (18%). Respiratory (11%), reproductive (10%) endocrine (8%) and cardiovascular (6%) accounted for the other signs and symptoms patients complained of. Interestingly, genitourinary (1%) and optical/dental/auditory (2%) were the least common signs and symptoms found.

Table 5 demonstrates the most common individual signs/symptoms according to each category. While stress was the most common (27.3%) over all categories, for the neurological system, dizziness (9.2%), and paraesthesia (6.4%) were most frequent. Reflux (7.1%) and constipation (6%) were commonest for gastrointestinal, while for reproductive it was dysmenorrhea (6.7%). Blurred vision (0.8%) and tinnitus (0.8%) were the most predominant signs/symptoms for the optic/dental/auditory category.

(c) 2004 Victoria University

Figure 1: Frequency of reported undiagnosed signs and symptoms



[3]*Abbreviations used in Figure 2*

(c) 200
Victoria Unive

[3] O/D/A – optical/dental/auditory
Psy – Psychological
CVS – Cardiovascular system
Resp – Respiratory system
GIT – Gastrointestinal system
GU – Genitourinary System
Repr – Reproductive system
Neur - Neurological

Table 5: Most common undiagnosed signs and symptoms reported

	MOST COMMON SIGNS AND SYMPTOMS	Frequency (%)	NEXT MOST COMMON SIGNS AND SYMPTOMS (%)
Psychological	Stress	27.3	n/a
Neurological system	Dizziness	9.2	Paraesthesia (6.4), Fainting (1.6), Hypoglycaemia (0.7), Weakness (0.6)
Gastrointestinal system	Reflux	8.5	Constipation (6), Bloating (2.6), Diarrhoea (2.1), Flatulence (1.2)
Reproductive system	Dysmenorrhea	6.7	Irregular periods (2.3), Menorrhagia (1.4), Amenorrhea (0.2),
Respiratory system	Sinus congestion	6.5	Cough (4.3), Shortness of breath (0.7), Wheeze (0.3)
Cardiovascular system	Cramps	4.2	Oedema (1.3), Palpitations (0.8)
Endocrine system	Lethargy	4.2	Heat/cold intolerance (2.5), Polydipsia (0.9), Alopecia (0.8)
Optic/dental/auditory	Blurred vision	0.8	Tinnitus (0.8), Nystagmus (0.1)
Genitourinary system	Polyuria	0.7	Urinary incontinence (0.2), Penile dribbling (0.2), Nocturia (0.1),

(c) 2004 Victoria University

DISCUSSION

Patient profiles

The mean age of patients was 36 (+/- 1.5) years of age, and of these patients, 55% were female and 45% male, which concurs with the ratios of female and male patients attending for health care services generally. [19] As expected, the mean age was relatively young, reflecting the fact that the clinic is a student clinic. This may have meant a lower proportion of age-related co-pathologies and previous conditions being found than may be the case in the general population, as according to the ABS[19] the incidence of many diseases increases proportionately with age.

(c) 2004 Victoria University

Presenting complaint

The most common presenting complaints found in the current study were low back pain (LBP) (25.3%) and cervical/neck pain (22.7%), after which the number of cases for other presenting complaints dropped greatly to 12% for both upper and lower limb complaints. These findings are consistent with those from previous studies that documented presenting complaints in osteopathic clinics, [1, 14, 15] which shows that the patient profiles in the teaching clinic are consistent with the general osteopathic population.

Frequency of co-pathologies

Due to the absence of studies regarding co-pathologies in osteopathic patient populations, a comparison was made with the Australian Bureau of Statistics Health Census[19] documentation of the frequency of medical conditions in the general population. The findings of this study are generally consistent with the ABS[19] findings, and show that the

osteopathic teaching clinic sample is mostly reflective of the general Australian population. However, there were some discrepancies found.

The main co-pathologies found in the current study was myopia/shortsightedness, with a frequency of 17.7%. This concurs with the ABS[19] findings of the most commonly reported condition was problems with eyesight, including myopia/short sightedness (21%). However, in 10.3% of the osteopathic patients' records all that was recorded was 'glasses', but the reason for their use was not documented, so potentially the figure for myopia (and hyperopia) may be higher than was stated.

The second most frequent co-pathology identified was asthma (13.9%), which was slightly higher than the ABS[19] findings for asthma (12%). This discrepancy may be related to the average age of the sample taken from the teaching clinic being 36 years and according to the ABS, [19] 14% of people between 0-19 years of age suffer from asthma. Therefore, it is expected that the figure for asthma would be higher, given the average age of patients attending the teaching clinic.

(c) 2004 Victoria University

According to the ABS[19] 14% of the Australian population reported having arthritis (inclusive of osteoarthritis and rheumatoid arthritis), whereas the current study found a much lower frequency of arthritis of 1.35%. According to the ABS[19] the incidence of these diseases increases proportionately with age, and the incidence of arthritis increases with age from one in three of those aged 55-64 years to just over half (52%) of those aged 75 years and over. As the average age of the patients in the current study was only 36, it

is to be expected that some of the most common ageing diseases in Australia were not commonly occurring in this study. However, the current osteopathic curriculum does include study of the common age-related conditions noted in the ABS[19] survey, so could not be said to be deficient in this respect. It was recognised prior to commencement that there would be a selection bias in the age range the sample would contain, given that the clinic recruits a large number of patients from within the university community, leading to a greater preponderance of younger patients than might be expected in a non teaching clinic.

The findings of the type and frequency of co-pathologies identified in this study are consistent with the ABS.[19] Therefore, these findings may be used by educators and/or students to evaluate whether their theoretical and clinical training provides them with a detailed overview and clinical exposure to the most commonly occurring diseases in Australia. Even though Osteopaths do not treat most of these diseases directly, having an awareness and understanding of them is important, especially if they contraindicate treatment or change the management of the patient.

(c) 2004 Victoria University

Frequency of reported signs/symptoms

While it was not possible to diagnose conditions on the basis of the undiagnosed signs and symptoms reported in this study, almost all of these signs and symptoms affected systems for which those pathologies listed as common in the ABS[19] figures are covered in the educational curriculum. The high levels of stress reported are of note, but are in line with the findings of other general population studies.[19]

Implications of findings on curriculum development

One of the outcomes of the current study was to assist educators in gaining a wider understanding of the patient demographics and most commonly occurring co-pathologies seen in the teaching clinic, which may be independent or related to the patients' presenting complaints. The current Victoria University osteopathic curriculum was influenced by the curriculum taught within the earlier established osteopathy course at RMIT and also by international osteopathic courses.[7] However, when the course was devised it was unknown whether the curriculum in relation to clinical diagnosis was an accurate reflection of co-pathologies prevalent in the Osteopathic patient population. Therefore, a future study could examine the findings from the current study of the frequency and incidence of co-pathologies and compare them with the Victoria University osteopathic curriculum and see if they are consistent. A further study could use the current study's findings about co-pathologies and compare them across the three Australian osteopathic courses to see if the curriculum taught is consistent with the co-pathologies seen by students in teaching clinics, as there may be differences in patient populations and specific conditions covered in each osteopathic course.

(c) 2004 Victoria University

The current study is the only one that has examined the frequency of co-pathologies and because it was undertaken in a student teaching clinic, it is difficult to know whether the patient profiles are similar to those of patients seeking treatment in private practice. Certainly the average age of patients in this study was low, and this was reflected in the low prevalence of age-related conditions. Therefore, future studies could replicate the

current study and compare the type and frequency of the main co-pathologies seen by osteopaths in private practice with those identified in a teaching clinic. This would further aid in clarification of the co-pathologies issue and the repercussions it may have on developing the appropriate osteopathic curriculum. If there are co-pathologies that are common in private practice but poorly represented in the student clinic, they could then be actively compensated for within the teaching program.

The average age of patients attending the teaching clinic was below 40 years of age, mainly due to the majority of patients being students themselves. Therefore, the results of the current study indicate the need for a greater variety of patients to expand the students' clinical exposure and ensure that they see more cases of age-related disease in their training.

(c) 2004 Victoria University

In particular, there is a need to increase clinical exposure to patients with arthritides, as their incidence was found to be low in the teaching clinic compared with their incidence in the general population. This is necessary because students are not having adequate exposure to patient's with arthritides and as a result possibly not as experienced in treating and managing patients with arthritides as they should be. Increasing clinical exposure may be achieved by external placement of students in nursing homes or private hospitals where the average age is higher. Also, promotion of the teaching clinic could be improved to social groups or clubs, such as older persons' sporting teams, where participants are over 60 years of age, and thus more likely to suffer from arthritis. Further, the use of advertising in local newspapers, or by writing articles that focuses on Osteopathic treatment of specific conditions, may also be useful.

Perceptions of Osteopaths

Furnham et al[16] found that complementary medical patients (of whom some were osteopathy patients) saw complementary practitioners as having more time, being more sensitive to emotional issues, and even offering better explanations of illness. Therefore, osteopaths as 'holistic' practitioners are playing a greater role in their patient's health care than many have suspected. Based on the findings of this study, it is evident that most patients (97.8%) that attended the clinic for Osteopathic treatment had at least one co-pathology. Therefore, the current study shows the potential for Osteopaths not only to play a large role in treatment of their patient's presenting complaint but also in the care and advice they can provide their patients about their previous and co-existing conditions.

(c) 2004 Victoria University

Jamison[20] was disappointed to find that chiropractors seldom came to mind when participants (i.e. chiropractic patients) were asked to spontaneously respond to the term *health information*. As there is an overlap between the conditions chiropractors and osteopaths treat, it is likely that osteopathic patients also have this perception. Given the number of patients presenting with co-pathologies, this study demonstrates the need for an increased public awareness of the potential for Osteopaths to play in their patients' health. As primary health care practitioners, osteopaths have the clinical and theoretical training to diagnose, treat and manage many types of conditions, therefore it is important that our patients are aware of the extent of our training, and this study will help to contribute to this pool of information.

Additional Information

Interestingly, visceral conditions (4%) were the least common *presenting complaints* for which patients attended the clinic for treatment. However, some of the most common *co-pathologies* recorded were common visceral conditions that Osteopaths consider themselves able to treat. One such condition is irritable bowel syndrome (IBS), which accounted for 4.8% of all gastrointestinal conditions. Even though this figure was lower than the ABS National Health Survey[19] findings of one in seven Australians, perhaps a lack of awareness by the community is present regarding the scope of what osteopathic students can treat.

A solution to increase public awareness may be to educate health professionals such as general practitioners (GPs) to the variety of conditions that Osteopaths are able to treat. Formal courses designed to inform GPs and other medical practitioners in general about osteopathy should be instigated as part of credits towards Continuing Professional Development (CPD) for osteopaths.

(c) 2004 Victoria University

Limitations

One of the greatest difficulties encountered in this study was the inconsistent extent of detail recorded by the students in patient case history notes. For example, in some cases only a drug history was recorded, indicating that either the patient could not give a detailed account of their co-pathologies or that the student osteopath failed to take a comprehensive enough history. For example, a number of patients were listed in their histories as taking medications that are usually prescribed for cardiovascular conditions,

but no diagnosed cardiovascular condition was recorded in the systemic enquiry or past medical history. This may have skewed the results, as some co-pathologies may have existed without being adequately recorded.

Some reasons for discrepancies in history taking may be due to the large number of treating students and the fact these students are at different levels of their education (3rd, 4th and 5th year students) and those in the junior year groups may not yet appreciate the value of why they need such information about a patient's medical history. Perhaps students may have asked the specific questions about diseases but did not actually record their findings or due to time constraints omitted certain organ systems from their history taking, therefore missing some information about co-pathologies and/or their signs and symptoms.

(c) 2004 Victoria University

A potential weakness of the current study is the failure to clearly separate figures between previously occurring conditions patients suffered in the past and those co-pathologies they were actually suffering from at the time of the consultation. Based on the way information was recorded by students in the patient histories, this was not possible in many cases. Hence, future studies could make the distinction between previous illnesses and those the patient is currently suffering from, as this could potentially provide a more accurate representation of the frequency of current patient conditions. However, the information regarding past illnesses is still of great importance due the potential of these to have an impact on the patient's current health.

Further studies could examine, as suggested, osteopathic private practice clinics to see whether they more accurately reflect the prevalence of age-related diseases.

A study of the chiropractic curriculum by Kleynhans[21] suggested the inclusion of a pathology subject into an undergraduate curriculum that incorporates *'pathology which modifies chiropractic (osteopathic) management; the relevance of mechanical pathologies, pathomorphology and contraindications to patient management.'*

Curriculum developers could examine Kleyhans[21] suggestion in the future and determine whether it could be an effective subject inclusion into the osteopathy course to help students understand the importance of various diseases and their impact on osteopathic treatment and/or management of their patients.

(c) 2004 Victoria University

CONCLUSION

The findings of the type and frequency of co-pathologies identified in this study are generally consistent with the ABS national trends.[19] Therefore, these findings may be used by educators and/or students to evaluate whether their theoretical and clinical training in the curriculum provides them with a detailed overview and clinical exposure to the most commonly occurring diseases in Australia.

Although as Osteopaths we predominantly treat patients with musculoskeletal problems, most patients we see will also have at least one co-pathology present in their medical history. Given the number of patients presenting with co-pathologies, this study demonstrates the need for an increased public awareness of the potential for Osteopaths to play a part in patients' general healthcare.

(c) 2004 Victoria University

Students need to have greater exposure to the conditions that were not commonly identified in the current study but common in the wider community, such as arthritides. This may be achieved by external clinical placement in settings where these conditions are more frequently occurring.

Co-pathologies can influence a patient's musculoskeletal complaint, as well as the type and efficacy of osteopathic treatment. Therefore it is important that students and educators alike are aware of the prevalent co-pathologies so that the curriculum is tailored to include these conditions, so that graduates are better prepared for life in private practice.

REFERENCES

1. Pringle M, Tyreman S, Study of 500 patients attending an osteopathic practice, British Journal of General Practice, 1993; January:15-8.

2. Bullock M, Pheley A, Kiresul T, Lenz S, Culliton P, Characteristics of patients seeking therapy at a hospital-based alternative medicine clinic, The Journal of Alternative and Complementary Medicine, 1997;31-37.

3. Meadows JTS, Orthopaedic differential diagnosis in physical therapy: The study approach. USA: McGraw-Hill; 1999: 84-97.

4. Gibbons P, Tehan P, Manipulation of the spine, thorax and pelvis; An Osteopathic perspective, London: Churchill Livingstone; 2000: 24-5.

5. McCance K, Hueter S, Pathophysiology: The biologic basis for disease in adults and children, USA, Mosby, USA, 2002: 334-8.

6. MacDonald C, Cox P, Bartlett D, Productivity and client satisfaction: A comparison between physical therapists and student-therapist pairs, Physiotherapy, 2002: 92-101.

7. Victoria University 2004 Handbook OnLine, Faculty of Human Development: www.vu.edu.au, viewed: 12/11/04

(c) 2004 Victoria University

8. Royal Melbourne Institute of Technology 2004 Handbook OnLine, Faculty of Human Development:
www.rmit.edu.au, viewed: 17/11/04

9. University of Western Sydney, 2004 Handbook OnLine, Health Sciences and Nursing: www.uws.edu.au, viewed: 17/11/04

10. Robertson A, Gibbons P, Carter A, Student and patient perspectives on the interaction between supervisors, students and patients during clinical teaching experience at a university outpatient clinic: a descriptive pilot study, Journal of Osteopathic Medicine, 2002; 5(1):8-15.

11. Hunt A, Higgs J, Adamson B, Harris L, University education and the physiotherapy professional, Physiotherapy, 1998: 84(6): 264-273.

12. Carruthers R, Blenheim MNZRO, A Demographic study of an osteopathic patient population, The Journal of New Zealand Register of Osteopaths, 1991;20-3.

13. Walsh M, A study of patients and patient complaints at chiropractic teaching clinics, Chiropractic Journal of Australia, 1992; 22(2):61-64.

(c) 2004 Victoria University

14. North NH, Madas E, Leggs SJ, Goddard RW, Carruthers R, Cartmell L, Gollan C, Variation in clinical practice of osteopathy in the central region of New Zealand, Journal of Osteopathic Education and Clinical Practice, 1998; March:19-26.

15. McIlwraith B, A survey of 1200 osteopathic patients in the United Kingdom, Journal of Osteopathic Medicine. 2003;6(1); 13-18.

16. Furnham A, Vincent C, Wood R, The health beliefs of three groups of complementary medicine and a general practice group of patients, The Journal of Alternative and Complementary Medicine, 1995;Vol 1: 347-59.

17. Medicare Benefits Schedule: Allied Health and Dental Services, Medicare benefits for allied health and dental care services provided to people with chronic conditions and complex care needs, 2004, Australian Government Department of Health and Ageing, Canberra: 10-7.

18. Murtagh J, General Practice, NSW: McGraw-Hill; 1998.

19. Australian Bureau of Statistics 2001, National Health Survey: Summary of Results, Australia, cat. no. 4364.0, ABS, Canberra, 2001.

20. Jamison J, Perceptions: A case study of chiropractic patients in eastern Australia, Chiropractic Journal of Australia, 2000;Vol 30; March:2-4.

(c) 2004 Victoria University

21. Kleynhans A, Towards an integrative chiropractic curriculum design, Chiropractic Journal of Australia, 1997; 27(2): 79-85.

(c) 2004
Victoria University

APPENDIX 1: Raw Data

(c) 2004
Victoria University

a) Cardiovascular Pathology (%)

Hypertension	10
Hypotension	6.7
Hypercholesterolaemia	5
Varicose veins	3.2
Arrhythmia	3.1
Migraine	2.9
Acute myocardial infarction (AMI)	0.9
Haemorrhoids	0.9
Chill-blains	0.8
Raynaud's phenomenon	0.4
Atheroma	0.3
Angina	0.3
Deep vein thrombosis (DVT)/thrombosis	0.3
Cerebral haemorrhage	0.3
Subdural haematoma	0.3
Abdominal aortic aneurism	0.2
Postural hypotension	0.2
Lymphoedema	0.1
Breast haematoma	0.1
Vasculitis	0.1
Absent jugular vein valve	0.1
Atrial Fibrillation	0.1
Collapsed mitral valve	0.1
Enlarged heart	0.1
Transient ischaemic attacks (TIA)	0.1
Stroke	0.1
Congenital Heart Disease	0.1

(c) 2004 Victoria University

b) Cardiovascular Signs and Symptoms (%)

Cramps	4.2
Oedema	1.3
Palpitations	0.8

c) Haematology (%)

Iron deficient anaemia	1.3
Thalassemia	0.3
Thrombocytopenia	0.2
Pernicious anaemia	0.2

d) Respiratory Pathology (%)

Asthma	13.9
Upper Respiratory Tract Infection (URTI)	8
Allergic rhinitis (hayfever)	7.8
Bronchitis	2.8
Sinusitis	2.8
Pneumonia	1.4
Pleurisy	0.8
Pneumothorax	0.6
Whooping cough	0.6
Lower respiratory tract infection	0.5
Sleep apnoea	0.4
Tonsillitis	0.3
Croup	0.3
Nasal polyps	0.1
Bronchiectasis	0.1
Influenza	0.1

e) Respiratory Signs and Symptoms (%)

Sinus congestion	6.5
Cough	4.3
Shortness of breath (SOB)	0.7
Wheeze	0.3
Haemoptysis	0.2

(c) 2004 Victoria University

f) Gastrointestinal Pathology (%)

Appendicitis	9.2
Irritable bowel syndrome (IBS)	4.8
Hernia (umbilical, inguinal, hiatus)	3.5
Intolerance (gluten, dairy, wheat, etc)	2.8
Peptic ulcer	2
Cholelithiasis (gall stones)	1.5
Hepatitis (A, B, C)	1.1
Giardia	0.6
Coeliac disease	0.6
Duodenal ulcer	0.5
Gastroenteritis	0.5

Diverticulitis	0.4
Anal fissure	0.4
Mouth ulcers	0.3
Bowel polyps	0.2
Oesophagitis	0.2
Oesophageal ulcer	0.2
Ulcerative colitis	0.1
Crohn's disease	0.1
Bowel tear	0.1
Peritonitis	0.1
Stomach polyps	0.1
Bowel abscess	0.1
Prolapsed colon	0.1
Bowel resection	0.1
Blue-green algae poisoning	0.1

g) Gastrointestinal Signs and Symptoms

Reflux	8.4
Constipation	6
Bloating	2.6
Diarrhoea	2.1
Flatulence	1.2
Nausea	1
Vomiting	0.6
Bloody stool	0.5
Jaundice	0.2
Faecal incontinence	0.1

(c) 2004 Victoria University

h) Genitourinary Pathology (%)

Urinary tract infection (UTI)	3.2
Nephritis	1.3
Renal calculi	0.9
Benign prostatic hypertrophy (BPH)	0.8
Herpes simplex virus (HSV)	0.8
Cystitis	0.7
Candida	0.6
Chlamydia	0.4
Hydrocele	0.2
Varicocele	0.2
Renal infection	0.2
Proteinuria	0.1

Glomerulonephritis	0.1
Urethritis	0.1
Kinked urethra	0.1
Pyelonephritis	0.1
Nephropathy	0.1
Human Papilloma Virus (HPV)	0.1

i) Genitourinary Signs and Symptoms (%)

Polyuria	0.7
Urinary incontinence	0.2
Penile dribbling	0.2
Nocturia	0.1
Hematuria	0.1
Stress incontinence	0.1

j) Reproductive Pathology (%)

Pregnancy	5.9
Menopause	4.2
Polycystic ovary	2.5
Endometriosis	1.1
Miscarriage	0.7
Fibroids	0.6
Labial dermatitis	0.1
Labial cyst	0.1
Uterine cyst	0.1
Stillborn	0.1
Prolapsed uterus	0.1
Undescended testes	0.1
Premature birth	0.1
Prolapsed vagina	0.1

(c) 2004 Victoria University

k) Obstetric Pathology (%)

Pre-eclampsia	0.5
Toxaemia	0.3

l) Reproductive Signs and Symptoms (%)

Dysmenorrhea	6.7
Irregular periods	2.3
Menorrhagia	1.4
Amenorrhea	0.2

m) Neurological Pathology (%)

Epilepsy	0.6
Carpal Tunnel Syndrome	0.5
Morton's neuroma	0.4
Multiple sclerosis (MS)	0.2
Bell's Palsy	0.2
Parkinson's disease	0.1
Myasthenia Gravis	0.1
Arachnoid cyst	0.1
Optic neuritis	0.1

n) Neurological Signs and Symptoms (%)

Dizziness	9.2
Paraesthesia	6.4
Fainting	1.6
Hypoglycaemia	0.7
Weakness	0.6
Tremor	0.6
Gait disturbances	0.5
Vertigo	0.4
Memory loss	0.1
Muscle wasting	0.1
Fitting	0.1
Hyporeflexia	0.1
Loss of consciousness (LOC)	0.1

(c) 2004 Victoria University

o) Endocrine Pathology (%)

Non-insulin dependant diabetes mellitus (NIDDM)	0.9
Hypothyroidism	0.8
Hyperthyroidism	0.3
Diabetic neuropathy	0.3
Goitre	0.2
Thyroid agenesis	0.1
Glycogen storage disease	0.1
Thyroiditis	0.1
Acromegaly	0.1

p) Endocrine Signs and Symptoms (%)

Lethargy	4.2
Heat/cold intolerance	2.5
Polydipsia	0.9
Allopecia	0.8

q) Rheumatological Pathology (%)

Fibromyalgia syndrome	0.8
Chronic fatigue	0.7
Ganglion	0.6

r) Optical/Dental/Auditory Pathology (%)

Myopia	17.7
Wisdom teeth	15
Glasses*	10.3
Hyperopia	3.6
Deafness	2.7
Astigmatism	2.2
Cataracts	0.7
Braces	0.5
Perforated ear drum	0.4
Labyrinthitis	0.2
Bruxism	0.2
Glaucoma	0.2
Conjunctivitis	0.1
Rosacea	0.1
Colour blindness	0.1
Otosclerosis	0.1
Chronic otitis externa	0.1
Uveitis	0.1
Blindness	0.1

NB. 'glasses' was all the information noted

s) Optical/Dental/Auditory Signs and Symptoms (%)

Blurred vision	0.8
Tinnitus	0.8
Nystagmus	0.1

(c) 2004 Victoria University

t) Dermatological Pathology (%)

Eczema	8
Psoriasis	2.7
Dermatitis	2.2
Acne	1.8
Tinea	1.7
Subcutaneous cyst	0.8
Keratosis	0.2
Senile warts	0.1
Pruritus	0.1
Sweet syndrome	0.1
Ringworm	0.1

u) Infections (%)

Chicken pox	10
Rubella	5.6
Tonsillitis	5.4
Glandular fever	3.8
Mumps	1.2
Viral meningitis	0.6
Glandular fever	0.5
Adenoiditis	0.4
Scarlet fever	0.4
Herpes Zoster	0.4
Malaria	0.3
Human Immunodeficiency Virus (HIV)	0.2
Rheumatic fever	0.2
Cerebrospinal meningitis	0.1
Pharyngitis	0.1
Pilonidal cystitis	0.1
Typhoid	0.1
(Golden) staphylococcus aureus	0.1
Staphylococcus	0.1
Hook worm	0.1
Sacral abscess	0.1
Nocardia	0.1
Dengue fever	0.1
Septicaemia	0.1

(c) 2004 Victoria University

v) Psychological Disorders (%)

Depression	6.5
Anxiety	1
Panic attacks	0.5
Anorexia nervosa	0.5
Insomnia	0.4
Schizophrenia	0.2
Nervous breakdown	0.2
Bulemia	0.2
Bipolar disorder	0.2
Drug addiction	0.2
Obsessive Compulsive Disorder (OCD)	0.2
Intellectually disabled	0.1
Post-traumatic stress disorder (PTSD)	0.1
Dyslexia	0.1

w) Psychological Signs and Symptoms (%)

Stress	27.3

x) Tumour (%)

Malignant melanoma	1.6
Benign breast tumour	0.8
Pre-cancerous cervical tumour	0.7
Basal cell carcinoma (BCC)	0.6
Malignant breast tumour	0.5
Benign skin tumour	0.5
Malignant cervical tumour	0.3
Hodgkin's lymphoma	0.2
Squamous cell carcinoma (SCC)	0.2
Leukaemia	0.2
Malignant bowel tumour	0.2
Benign thyroid adenoma	0.2

(c) 2004 Victoria University

Ewing's sarcoma	0.1
Benign liver tumour	0.1
Malignant parotid gland tumour	0.1
Benign brain tumour	0.1
Malignant oesophagus tumour	0.1
Malignant ovarian tumour	0.1
Malignant brain tumour	0.1
Malignant salivary gland tumour	0.1
Lymphoma	0.1
Benign bowel tumour	0.1
Nasopharyngeal fibroma	0.1
Lymphadenopathy	0.1
Lipoma	0.1

y) Arthritidis (%)

Osteoarthritis (OA)	2.5
Gout	0.7
Rheumatoid arthritis (RA)	0.6
Juvenile rheumatoid arthritis	0.1
Psoriatic arthritis	0.1
Polymyalgia rheumatica (PMR)	0.1

z) Bone Pathology (%)

Osteoporosis	0.9
Osgood-Schlatter	0.8
Scheuermann's disease	0.4
Scoliosis	0.4
Osteopenia	0.3
Spina bifida occulta	0.2
Pilonidal sinus	0.2
Kleinfelter's syndrome	0.1
Osteogenesis imperfecta	0.1
Calvé-Legg-Perthes disease	0.1
Congenital Hip Dysplasia (CHD)	0.1
Sever's disease	0.1
Osteochondritis dessicans	0.1

(c) 2004 Victoria University

aa) Trauma/Fracture (%)

Whiplash	4.8
Radius	4.4
Metacarpal	3.1
Ulna	2.5
Nasal	2.2
Metatarsal	1.8
Concussion	1.6
Clavicle	1.6
Tibia	1.4
Fibula	1.2
Ribs	1.1
Humerus	1
Calcaneus	0.8
Femur	0.7
Scaphoid	0.6
Radio-ulna joint	0.6
Patella	0.4
Skull	0.4
Coccyx	0.4
Mandible	0.3
Talocrural joint	0.3
Sternum	0.2
Acetabulum	0.2
Cuboid	0.2
Thoracic spine	0.1
Lumbar spine	0.1
Sacrum	0.1
Cuneiform	0.1
Maxilla	0.1

(c) 2004 Victoria University

ab) Surgery (%)

Tonsillectomy	3
Hysterectomy	2.3
Cholecystectomy	1.8
Abortion	1.2
Vasectomy	0.7
Oophorectomy	0.3
Bladder lift	0.3
Splenectomy	0.2
Thyroidectomy	0.1

ac) Hereditary Conditions (%)

Ozler Weber Rendu syndrome	0.1

(c) 2004 Victoria University

APPENDIX 2: PATIENT INFORMED CONSENT

(c) 2004
Victoria University

New Patient Information Sheet

In order to create a patient account record for you on our computer system, we ask you to fill in the details below before your treatment starts, and hand the form back to the receptionist. After your details have been entered, the form will be destroyed. All patient data held on computer is stored in accordance with the Victorian Health Records Act, but as this is a teaching institution, some patient data is sometimes accessed for teaching and/or research purposes. In such cases, no data which would identify individual patients is ever used.

(c) 2004 Victoria University

Title (please circle) Mr. Mrs. Ms Miss Dr. Fr. Rev. Other……..

Surname……..

Given name(s)…….

Preferred name……...

Telephone (home)……**(work)**……

Mobile……**(email)**……...

Address……

……**Postcode**……...

Date of birth……

Marital status (please circle) single married de facto divorced separated widowed

Occupation…….

Are you a student or concession card holder? Yes No

Please note that in order to claim student or concession rates you must produce a valid student or concession card.