

**Are chiropractic patients in Malta satisfied with the outcome of their
treatment plan?**

By

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I would like to thank all colleagues and patients who supported this project by giving up some of their most invaluable time.

ABSTRACT

Rationale: For decades, the chiropractic profession, its validity and its proved effectiveness have been a topic of controversy from other health professionals. Regardless of the debate, the number of patients using chiropractic care in Europe grows every day. It is likely that chiropractic offers something unique. Thousands of research papers are available through renowned scientific databases which try to recognize and describe this uniqueness however, despite the official use of the profession in the Maltese archipelago no research has ever been carried out in Malta.

Objective: To quantify the chiropractic patient's satisfaction, in Malta, with the outcome of their management plan.

Design: Descriptive Analysis Survey

Setting: Private, in collaboration with University of Malta staff.

Subjects: Random, new and existing, chiropractic patients. Subjects were informed on patient's confidentiality.

Methods: Survey / Questionnaire

Results: The most frequent single-complaint presenting to a chiropractic office, in Malta, is LBP 43%, followed by neck 9.3% and, shoulder pain 4.9%. Daily activities are affected in more than half of the affected patients with 35.1% also reporting a financial burden. Medication, either OTC (50.6%), or prescription (32.9%), are largely used by these patients with up to 31.1% of those users suffering some side effects. The most common therapy used by Maltese residents appears to be massage (38.1%) while physiotherapy is used only by 20%. Referral to chiropractic is mostly by word-of-mouth (50.2%) while 8.4% is from family doctors. 84.9% of patients is very satisfied with the outcome of their chiropractic management plan with only 0.4% reporting dissatisfaction. Similar reports are shown on the desire to find/access chiropractic care through the NHS (82.2%) while 17.3% would not like to have chiropractic services in hospitals. No relationship was found between patient's satisfaction and age ($p=0.2064$) or sex ($p=0.7475$). However, a relationship was found between the

patient's satisfaction and the presenting complaint ($p=0.1386$) or number of attended visit to a chiropractic office ($p=0.001157$).

Conclusion: It seems that overall patient's satisfaction was high ranging from fairly satisfied to very satisfied. From the shown variables, it appears that patients affected by musculoskeletal conditions could eliminate unnecessary cost and would reduce, or even avoid, the use of ineffective medication. However, improvements are necessary from the chiropractic profession regarding standardization of complaint management plans and number of visits required. More studies are needed to ascertain the validity these findings.

Key words: Chiropractic Patient's Satisfaction, Chiropractic in Malta, Chiropractic Research, Chiropractic Effectiveness

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1. INTRODUCTION

Chiropractic is a science-based health care profession concerned with the study of the musculoskeletal system. Particular attention is given to the spine, focusing on its structures such as facet and sacroiliac joints, ligaments and muscles and, how these affect its functions. A doctor of chiropractic (DC), also referred to as a chiropractor, is a professional academically trained, to a Masters' degree (MChiro), in the diagnosis, treatment and management of common musculoskeletal conditions such a lower back pain. Chiropractors specialize in spinal manipulation, which is the therapeutic approach that uniquely separate chiropractic from other health therapies.

The growth and demand for chiropractic in the last two decades has led to a number of scientific publications, worldwide, demonstrating statistical and clinical evidence of its effectiveness (Clijsters, Fronzoni, Jenkins, 2014) and, patient's satisfaction (Hertzman-Miller, et al., 2002).

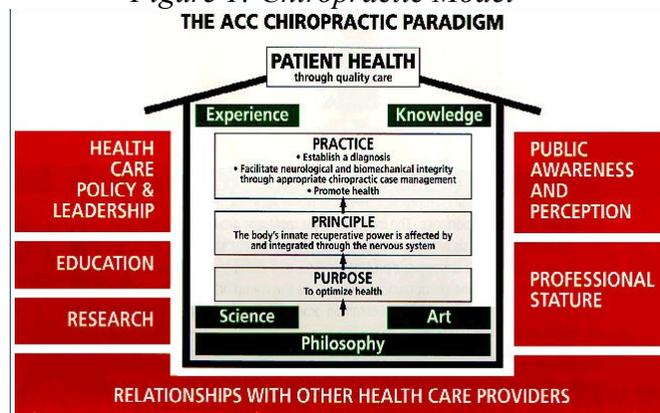
In Malta, chiropractors have been practicing their profession for over 30 years. Dr Elaine Mc Dougall, AECC graduate, was the first chiropractic practitioner in Malta in the early '80s.

Although scientific research on chiropractic is continuously carried out Internationally to achieve a global awareness, no chiropractic study has ever been carried out in Malta. This paper will, therefore, attempt to illustrate the basis of the chiropractic profession including its International education status, highlight some facts about chiropractic Worldwide and, investigate the chiropractic patient's satisfaction with the outcome of their treatment plan, in Malta.

1.1 What is Chiropractic

Chiropractic is a health profession that emphasizes the body' intrinsic ability to heal without the use of external agents such as drugs and/or surgery. The practice of chiropractic focuses on the relationship between structure (primarily the spine) and function (as coordinated by the nervous system) and how that relationship affects the preservation and restoration of health. Doctors of chiropractic recognize the value and responsibility of working in cooperation with other health care practitioners when in the best interest of the patient (ACC, 2015). Fig.1 shows a detailed graphic representation of the chiropractic model.

Figure 1: Chiropractic Model



The World Federation of Chiropractic (WFC) and the World Health Organization (WHO), similarly define chiropractic as a health profession concerned with the diagnosis, treatment and prevention of mechanical disorders of the musculoskeletal system, and the effects of these disorders on the function of the nervous system and general health. There is an emphasis on manual treatments including spinal adjustment and other joint and soft-tissue manipulation” (WFC, 2015 and WHO, 2015).

1.2 Chiropractic in the world

Chiropractic is voiced internationally by the World Federation of Chiropractic (WFC). The WFC was originally established at the World Chiropractic Congress in Sydney, Australia in 1988 and it represents, today, national associations of chiropractors in 88 countries, (WFC, 2015). The WFC is a member of the WHO.

1.2.1 Chiropractic in USA

In the United States, chiropractic is the third largest primary health care profession, surpassed in numbers only by physicians and dentists. It is the largest, most regulated, and best recognized of the complementary and alternative health care professions (NBCE, 2015). All 50 states, the District of Columbia, Puerto Rico, and the U.S. Virgin Islands officially recognize chiropractic as a primary health care profession distinct from medicine.

The American Hospital Association (AHA) and the American College of Surgeons (ACS), officially declared that there are no ethical or collective restraints to full professional cooperation between doctors of chiropractic and medical physicians and that such cooperation should include referrals, group practice, participation in all health care delivery systems, treatment and services in and through hospitals, participation in student exchange programs between chiropractic and medical colleges, and cooperation in research and continuing education programs (Chapman-Smith, 2005).

1.2.2 Chiropractic in Australasia

Chiropractic is accepted and fully legislated¹ in Australia and New Zealand. Education and professional standards, in Australasia, are governed by the Council on Chiropractic Education Australasia (CCEA) which is composed of the Australian and New Zealand chiropractic associations and the New Zealand chiropractic board. Since 2002, the CCEA has been assisting, with the provision of safe and competent chiropractic, the Australasian community. Australia and New Zealand offer, respectively, four and two internationally recognized educational programs.

1.2.3 Chiropractic in Europe

Chiropractic in Europe is represented by the European Chiropractor's Union (ECU) which consists of 22 National Association members. ECU data shows that approximately 6000 chiropractors live and practice in Europe (ECU, 2015), providing millions of treatment to European citizens every year.

Considering the role that the chiropractic profession covers in Europe, both as a primary and secondary health care provision, a European Standard has been designed by

¹ legislation to accept and regulate chiropractic practice

the Comité Européen de Normalisation (European Committee for Standardization, CEN) regarding health care provision by chiropractors. In May 2012, such European Standard was approved by CEN and, by the end of July 2014, every CEN Member States ought to have completed transposition of the CEN Standards in to each individual National Standards (CEN, 2015). The key points of the Standard focus on chiropractic education, patient's safety, clinical and professional ethics, research and cost-effective practice.

Currently, Belgium, Denmark, Finland, France, Iceland, Italy, Liechtenstein, Malta, Norway, Portugal, Serbia, Sweden, Switzerland and United Kingdom enjoy full legislation for the chiropractic profession.

1.2.4 Chiropractic in Malta

Chiropractic in Malta is regulated by the Council for the Professions Complementary to Medicine (CPCM). The CPCM overview the practice of Health Care Professions under the Health Care Professions Act, chapter 464, Nov/03.

CPCM records reveal that seven chiropractors are currently registered in Malta, however, the number of therapists carrying out some form of spinal manipulation in Malta is unknown. To assist the CPCM in improving the quality of chiropractic care delivered in Malta, in 2013 the Malta Chiropractic Association (MCA), was founded with the clear objective to promote public safety, develop chiropractic as a science and an effective health profession and ensures cooperation with other health professionals. The MCA' priority is to ensure that high quality chiropractic care may be delivered in Malta only by qualified chiropractors who gained their qualification from an Internationally accredited college and, are in possess of a valid Professional Liability Insurance policy (MCA, 2015).

No official data is available in Malta regarding the general use of chiropractic however, it is estimated that approximately ten to twenty thousand Maltese residents visit a chiropractic clinic every year.

1.3 Chiropractic Education

Chiropractors study for a minimum of four years, normally following at least a bachelor, or an undergraduate Master's degree, with a curriculum² that has a significant emphasis on the diagnosis and management of spine-related disorders.

Currently, the World Federation of Chiropractic (WFC) website lists 41 accredited chiropractic schools globally. Accreditation is granted by the Commission on Accreditation of the European Council on Chiropractic Education (ECCE) and, the American Chiropractic Council of Education (ACCE).

The University of Odense, in Southern Denmark, is the only accredited institution in the world offering a degree in Clinical Biomechanics (chiropractic) in complete integration with medical science. Medical and chiropractic students share the first three years of academic,

² It includes an average of more than 4300 hours of class and laboratory attendance including more than 1000 hours of clinical experience. Additionally, the accredited course of study of MChiro, commonly covered over five-year at university based programme, includes course units covering standards requirements under the provision of the regulations described within the Ionizing Radiation (Medical Exposure) Regulations 2000 and the (Amendment) Regulations 2006.

laboratory and clinical teaching to then divide, each in to their profession of choice.

1.4 Chiropractic Research

International sets of chiropractic Standards have been designed outlining Education, Scope of Practice, Patient's Safety and clinical limitations including relative and absolute contraindications, through continuous and solid scientific research carried out by and, in collaboration with, International research councils and research centres such as the Institute for Musculoskeletal Research & Clinical Implementation (IMRCI) UK and, the Nordik Institute of Chiropractic and Clinical Biomechanics (NIKKB).

Gary Gaumer, PhD, carried out a literature review and report of a new US national survey, which confirmed high satisfaction rates among persons using chiropractic. Gaumer added that “this is remarkable given the fact that much of the financial burden of the care is borne by patients and that the preponderance of care is for the difficult chronic problems of the back and neck” (Gaumer, 2006).

At the University of California, Hertzman-Miller, et al. (2002), carried out a study that compared the satisfaction of low back pain (LBP), patients randomized to receive medical or chiropractic care. They compared the satisfaction scores (on a 10-50 scale) after 4 weeks of follow-up among 672 patients receiving either intervention. They found out that the mean satisfaction score for chiropractic patients was greater than the score for medical patients (crude difference = 5.5; 95% confidence interval = 4.5, 6.5).

Another study on patient's satisfaction with chiropractic care was carried out by Haneline (2006), who investigated the satisfaction levels for 115 patients presenting with neck pain. Although several limitations were observed in his study design, Haneline revealed that a drastic pain reduction was reported, from a mean of 7.6 (median, 8.0) before treatment to 1.9 (median, 2.0) after treatment ($P < 0.0001$) concluding to a patient's satisfaction rate of 94%.

1.5 Purpose of this Study

This paper will try to find out whether chiropractic patients in Malta are satisfied with the outcome of their treatment plan, ranging from a variety of presenting conditions such as lower back pain (LBP), neck&shoulders pain and headache. Emphasis will be given to a) complaint presentation, b) patient's previous attempt to relieve their pain through other means, i.e. medications or other therapies, c) number of visits, d) practitioner involvement in the management plan i.e. home care exercises shown/given. Finally, a discussion will follow that will try to analyze the factors that influence patient's satisfaction and establish whether chiropractic patient's satisfaction rate in Malta is homogeneous with data from across the world.

2 METHODS

Eleven hundred (1100) chiropractic patients were asked to complete a survey on patient's satisfaction. Eight hundreds (800) questionnaires were handed in directly, while three hundred (300) were delivered via email in electronic format.

Patients' personal data was kept anonymous and, no details concerning practitioner's details or clinic location of care received were disclosed.

2.1 Study Design

This was a descriptive study adopting statistical analysis between variables. The questionnaire was divided in five main section: 1) demographic, 2) presenting complaint and activities affected, 3) use of OTC and/or prescription medications, 4) use of other/previous care and, 5) previous knowledge of chiropractic, number of visits and satisfaction.

2.2 Study Population

Randomized new and existing patients, from four chiropractic offices, with a variety of presenting complaints.

2.3 Questionnaire Validity

No available questionnaires were found that were considered suitable for this study. After creation of the questionnaire (*appendix one*) the following professionals were asked to proof-read it, in search for validation: two medics, one English language teacher and two pharmacists. The team found no ethical, bias or legibility issues.

2.4 Variables

The questionnaire presented twenty three variables, however, the main independent variables considered in this study are concerning 'demographic' and 'case management'; they include presenting complaint, overall number of visits and practitioner's participation in the patient's home rehabilitation program. The dependent variable is the overall satisfaction with the outcome of the management plan.

2.5 Analysis of the Results

The results were analyzed using 'R', a software environment for statistical computing.

In support of this descriptive study, chi-square tests were carried out to understand whether overall patient's satisfaction changed depending on factors such as age, gender, complaint presentation and total number of visits.

3 RESULTS

3.1 Return Rate, Age and Nationality Distribution

The overall return rate was of 225 questionnaires (20.4%); of these, 29 (12.9%) returned by electronic mail and 196 were either mailed or handed in (87.1 %). Male respondents were 44% while female respondents were 55.1%. Most respondents (44.8%) were aged between 25-45 years old (*Fig. 2*); age distribution for male and female respondents is illustrated in *fig. 3*.

Subset data for Nationality showed that 63.6% of the respondents were Maltese, 31% residents and 2.7% tourists (*fig. 4*).

Figure 2: All respondent's age distribution

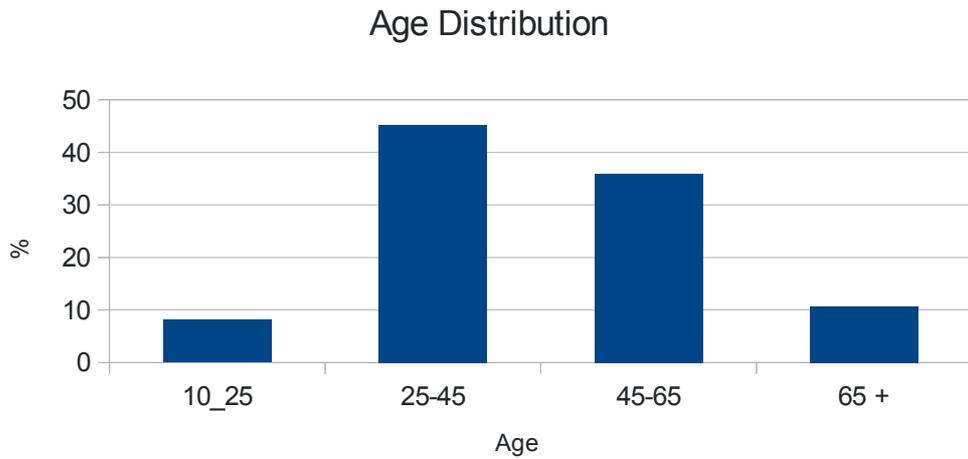


Figure 3: Age Distribution by Gender

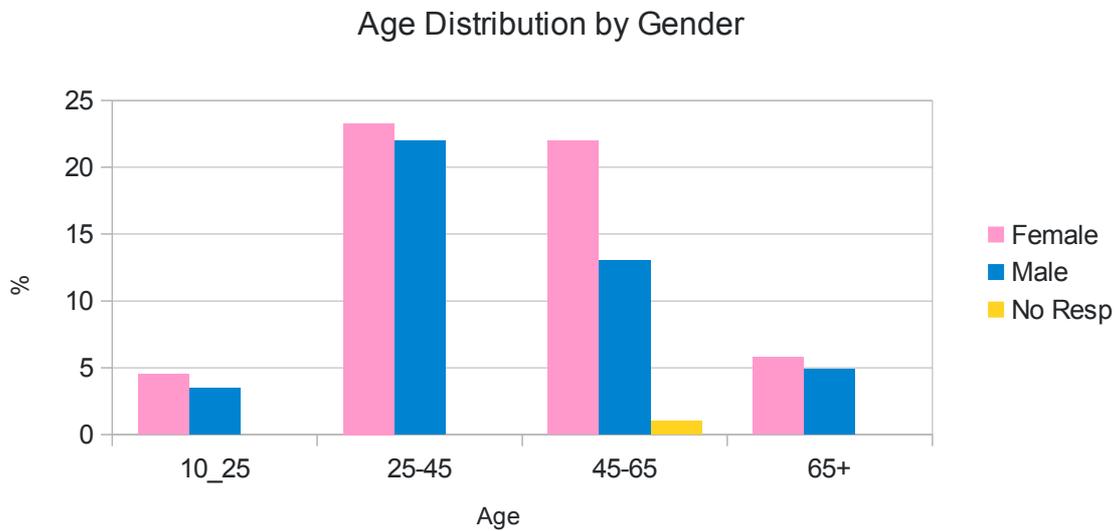
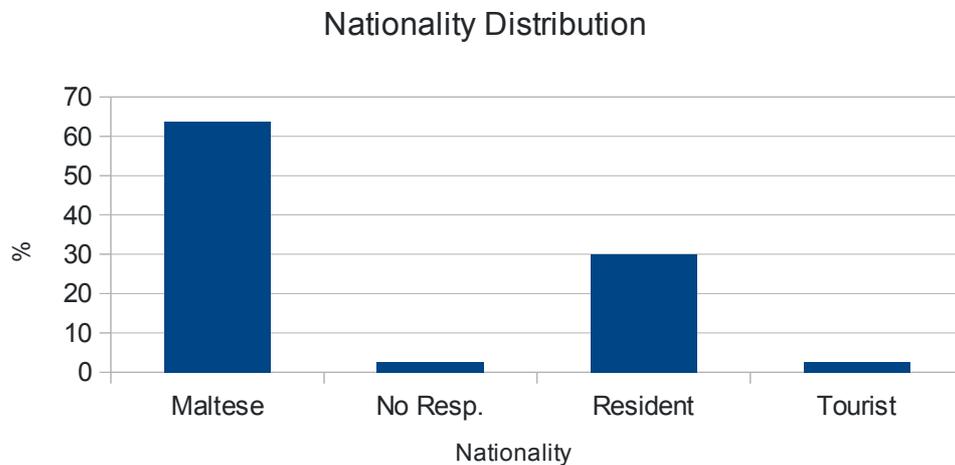


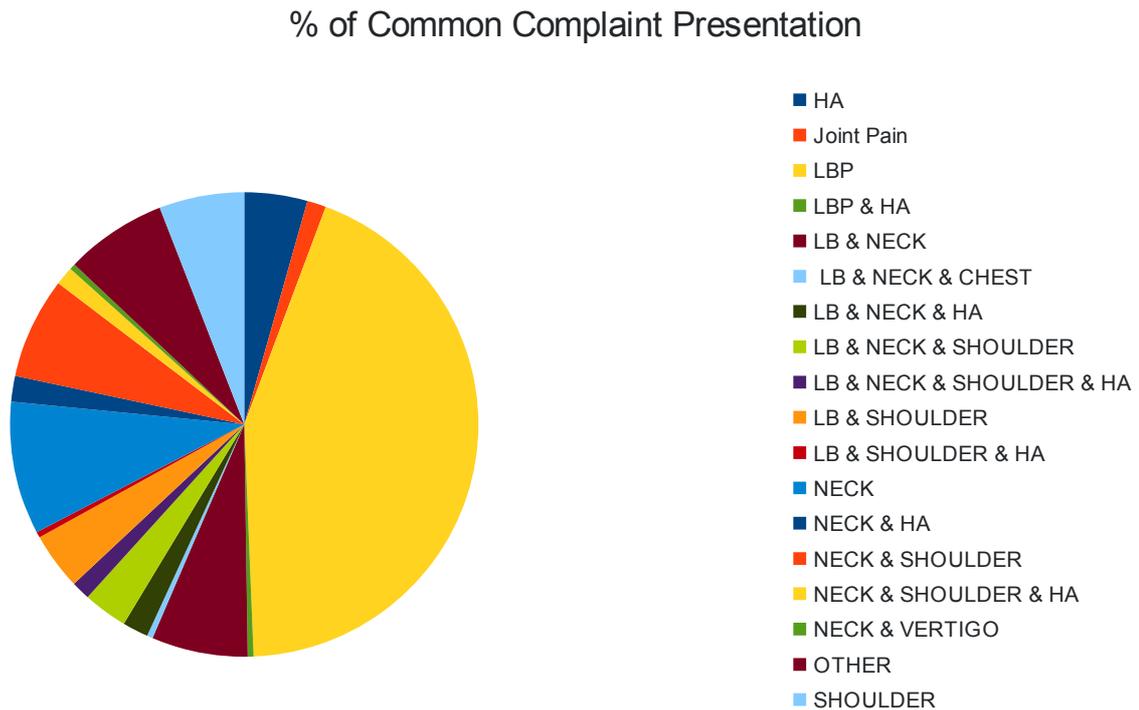
Fig. 4: Plot showing the respondents' Nationality.



3.2 Common Complaint and Daily Activities Affected

The collected data showed that the most common complaints presenting to a chiropractic office, in Malta, were LBP (44%), followed by neck pain (9.3%), shoulder pain (4.9%) and headache (4.4%). The graph in figure 5 also shows that lower back, neck and shoulder pain gain proportion when coupled to other presenting complaints.

Fig.: 5 Common Complaints Presenting to a Chiropractic Office



Our findings show that over half of the study population (58.2%) has been affected, in their daily activities, by their musculoskeletal complaint/s, however, only 35.1% of the population reports to have been affected financially (*Fig. 6*). The most reported single affected activity appeared to be exercise (26.7%), followed by work (22.9%); the detailed distribution of affected activities is shown in *Fig. 7*.

Figure 6: Study Population Affected by their MSK complaint/s

Population Affected by their Conditions and Financial Relevance

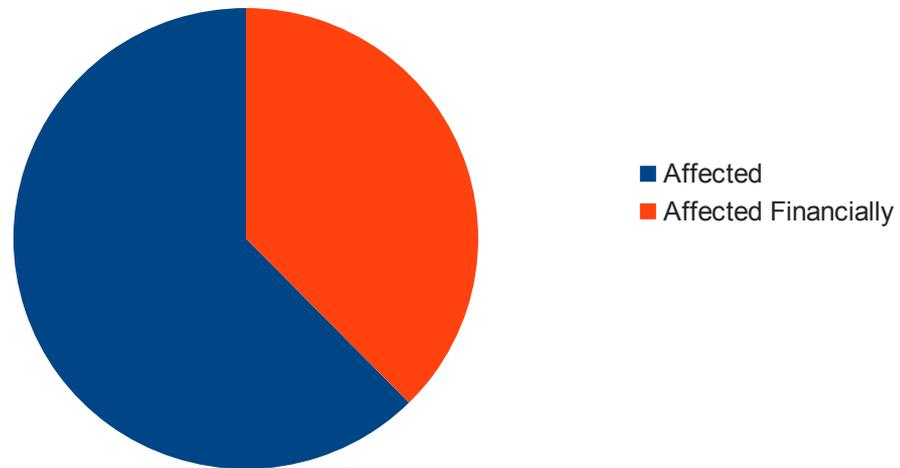
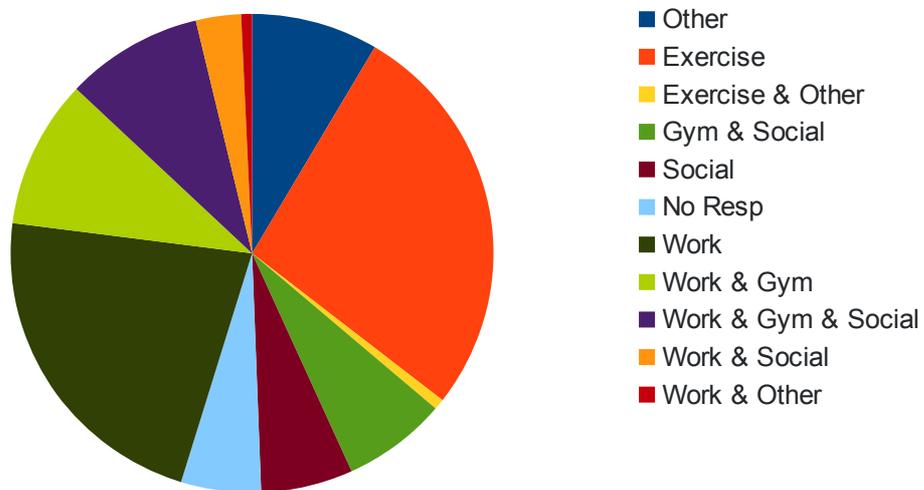


Figure 7: Graph showing the Distribution of Population's Affected Activities

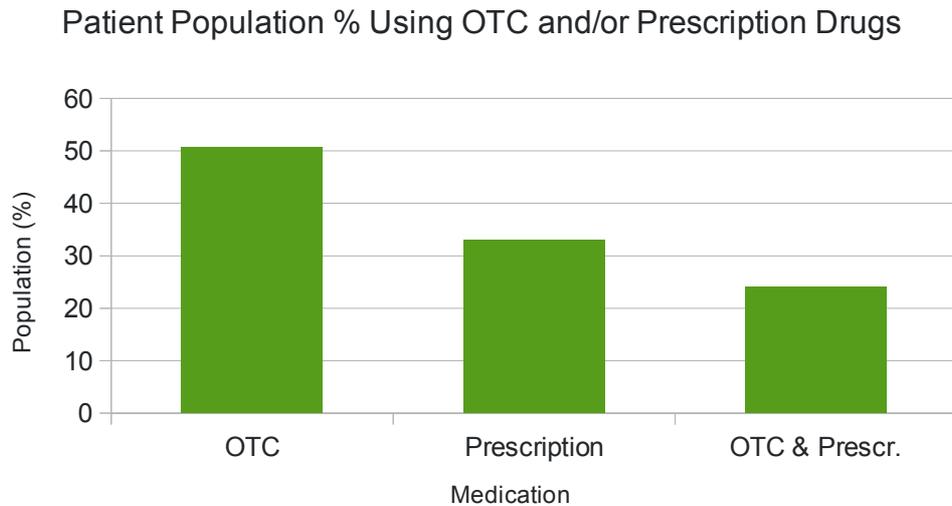
Affected Daily Activities



3.3 OTC and Prescription Meds

Further sub setting, showed that 83.5% of the population presenting to a chiropractic office, in Malta, has already tried to resolve their condition/s using either over the counter (OTC) 50.6% and/or prescription medications 32.9%. 24% of the respondents reported having used both OTC and prescription for their condition (Fig. 8).

Fig. 8: Graphic Representation of Medication Use in the Study Population



3.4 Medication Effectiveness, Time Used and Side Effects

OTC

24.5% of patients reporting to have used OTC found them ineffective while 71% found the drugs slightly effective (*Fig. 9*); 35.6% responded to have used the OTC drugs for less than 1 week, 28% for more than 1 week and 29.9% for more than 1 month (*Fig. 10*). OTC were reported to have no side effect in 74.5% of users while 20.1% reported to experience some side effects (*Fig. 11*).

Prescription

Of those respondents reporting to have used prescription medications to treat their condition/s, 27% found them ineffective while 63.5% found the drugs slightly effective (*Fig. 9*). Only 21.6% of these users took the medication for less than 1 week while 43.2% and 29.7% used the medications for more than 1 week and 1 month, respectively (*Fig. 10*). Side effects were reported by 31.1% while 61% reported no side effect (*Fig. 11*).

Inferential statistical test (Fisher exact test) showed that there is a relationship between the length of time for which medications were used and their side-effects (CI=95% and p-value=0.7122).

Fig. 9: Comparison of Population's Perceived Effectiveness of OTC and Prescription Drugs

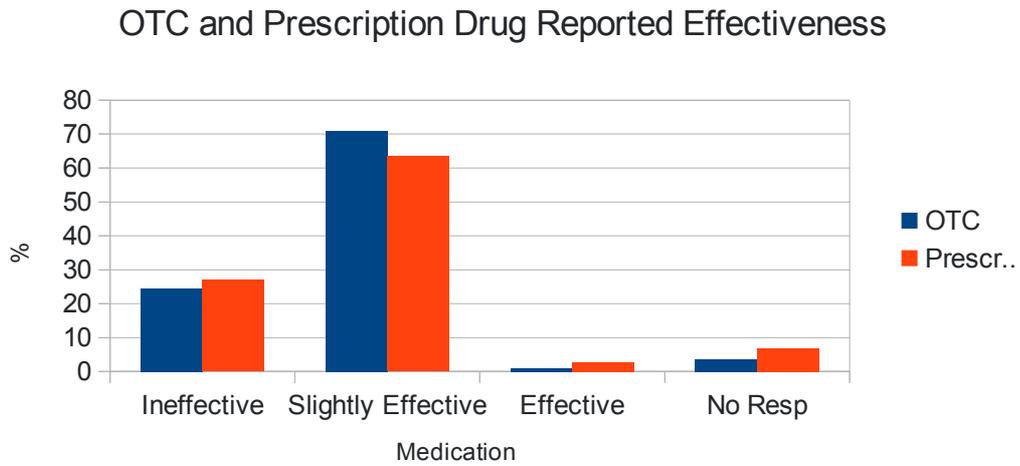


Fig. 10: Population's Reported Length of Time Using OTC and Prescription Drugs

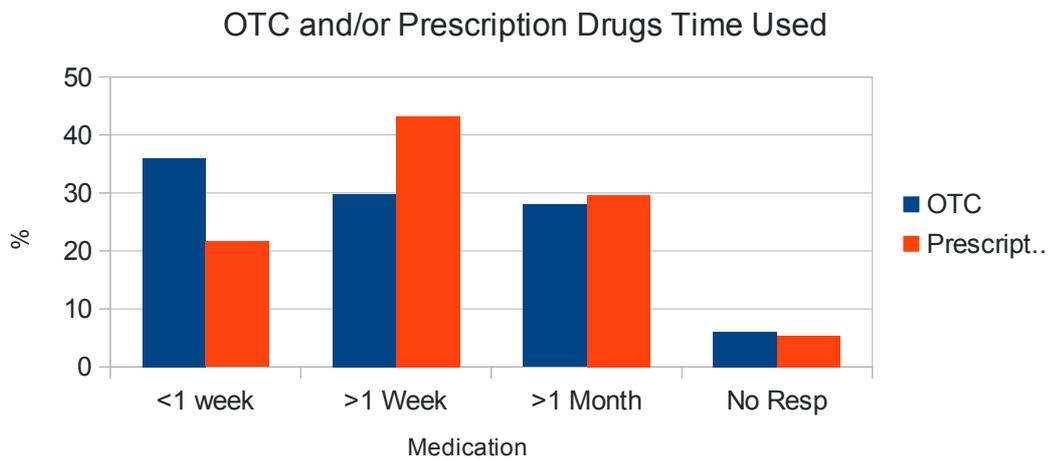
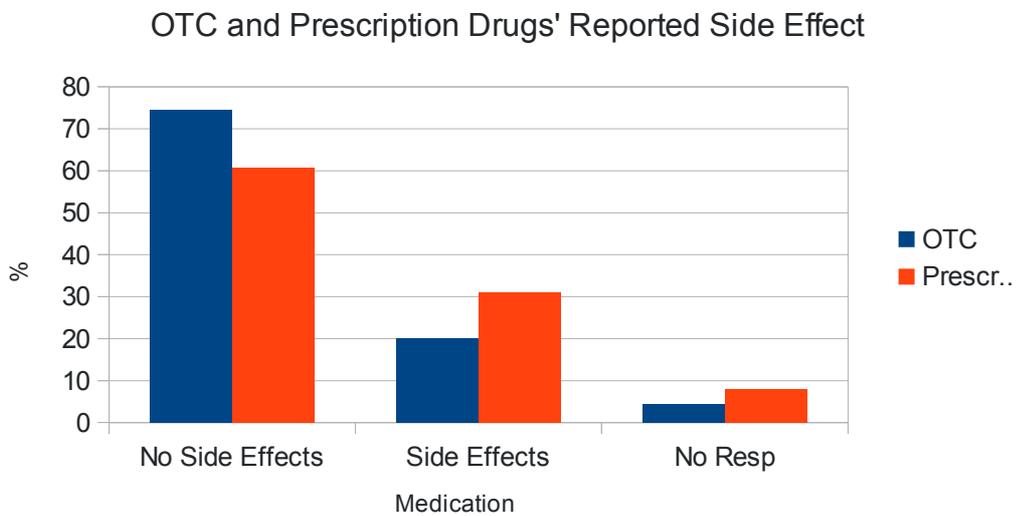


Fig. 11: Comparison of Population's Reported Side Effects of OTC and Prescription Drugs



3.5 Use of Other Therapies

We found out that 46.7% of the people presenting to a chiropractic office, in Malta, had already tried another form of therapy to resolve their pain (*Fig. 12*). The most commonly used therapies were massage (38.1%), followed by physiotherapy (20%). Other less commonly used therapies included acupuncture, heat, osteopathy and/or a combination of these (*Fig. 13*).

Fig. 12: Population Using Other Therapies before Chiropractic

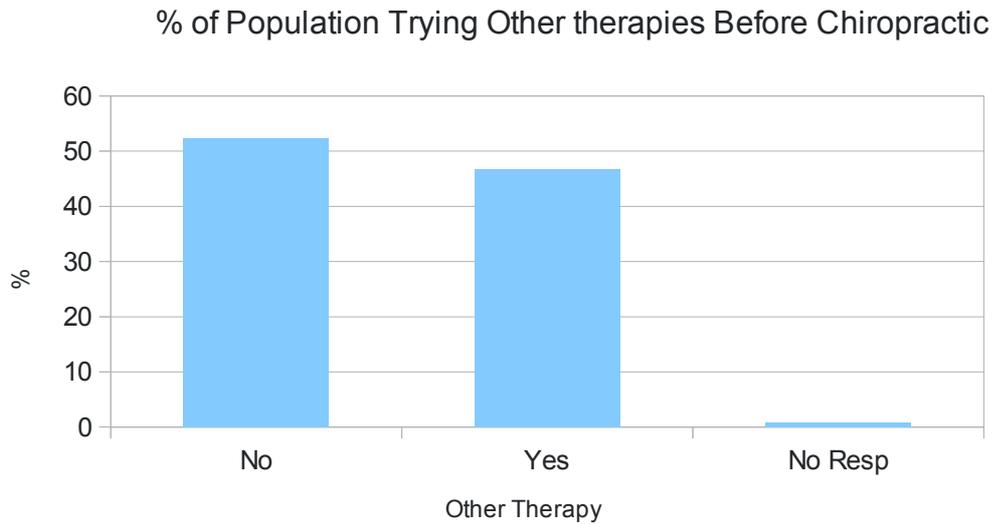
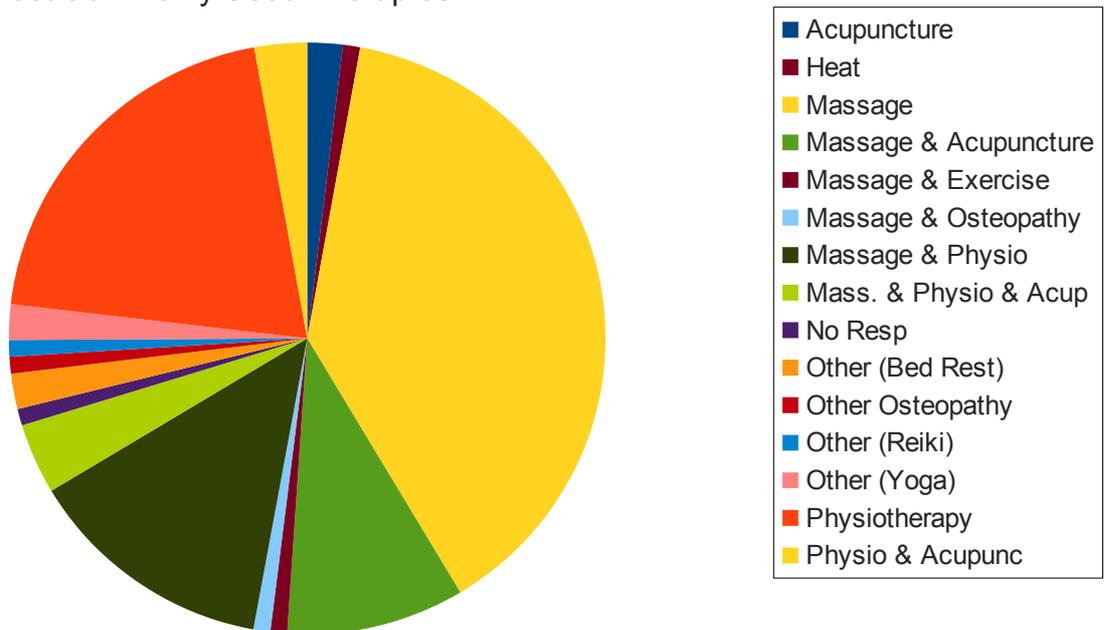


Fig. 13: Graphic Distribution of the Most Commonly used Therapies

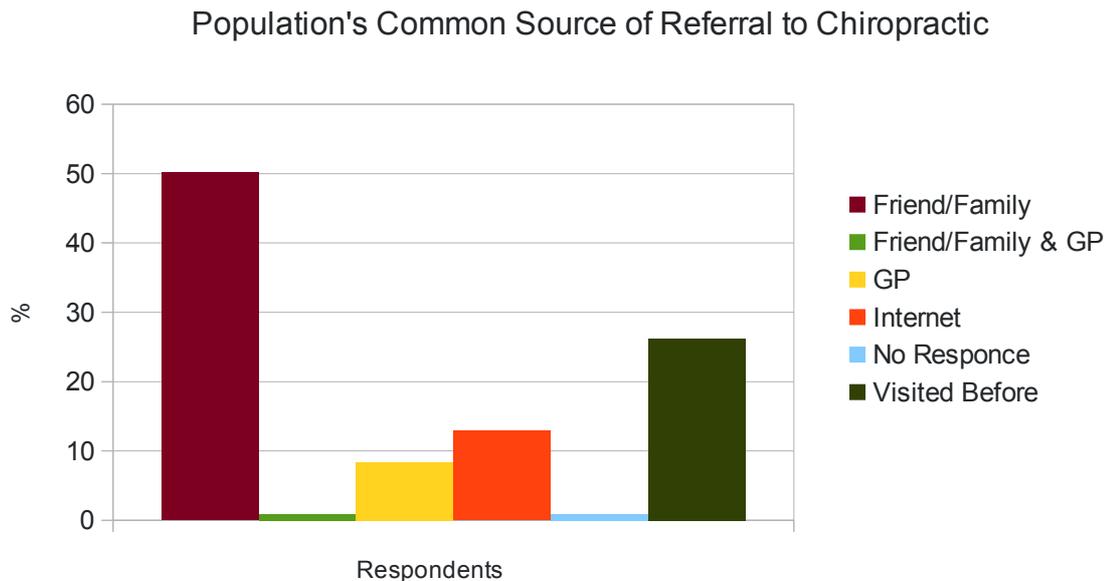
Most Commonly Used Therapies



3.6 Knowledge of Chiropractic

Subset data regarding population's awareness of chiropractic showed that the most common source for referral to a chiropractic professional, in Malta, comes from friends and/or family (50.2%) while previous knowledge of chiropractic accounts only for 26.2%. Furthermore, Maltese residents seem to obtain their information concerning chiropractic care from the internet (12.9%) and lastly from their family doctors (8.4%), (Fig. 14).

Fig. 14: Population's Awareness of Chiropractic



3.7 Overall Patient's Satisfaction

Number of Visits

62.7% reported to have visited a chiropractic office less than four times to manage their complaint/s, 26.2% attended more than four times and, 9.8% visited only once (Fig. 15).

Home Exercise

89.8% of the study population confirmed to have been given home therapy such as exercise and postural correction while 9.8% were not (Fig. 16).

Overall Satisfaction

It was observed that 84.9% of the respondents were very satisfied with the outcome of their management plan while 12% responded to be fairly satisfied; only 0.4% responded to be not so satisfied or unsatisfied (Fig. 17).

Chiropractic on NHS

From this study, it appears that 82.2% of the respondents would like to find chiropractic through the Maltese National Health System (NHS), while 17.3% would not (Fig. 18)

Fig. 15: Reported Number of Visits

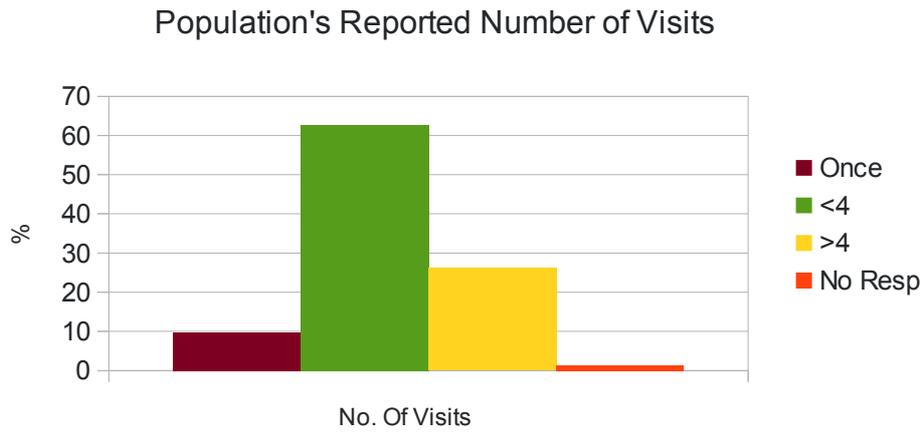


Fig. 16: Graph showing the % of Respondents being given Home Exercises

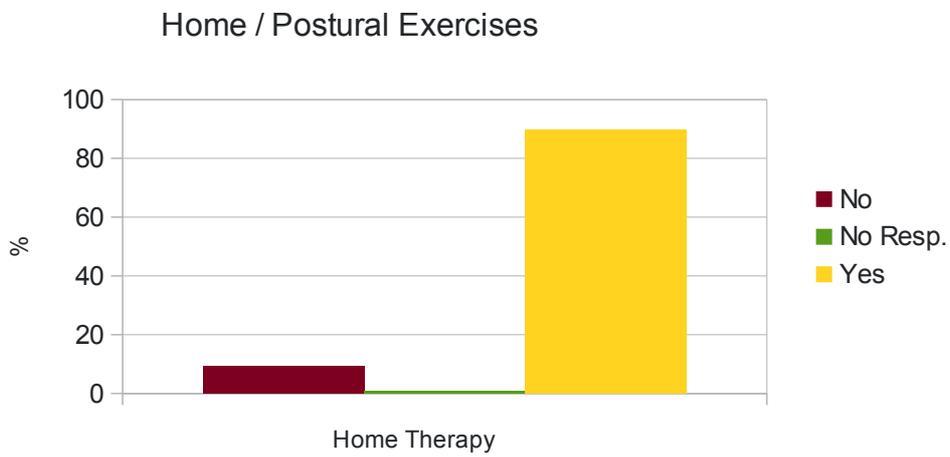


Fig. 17: Population's Overall Satisfaction with their Patient Management Plan

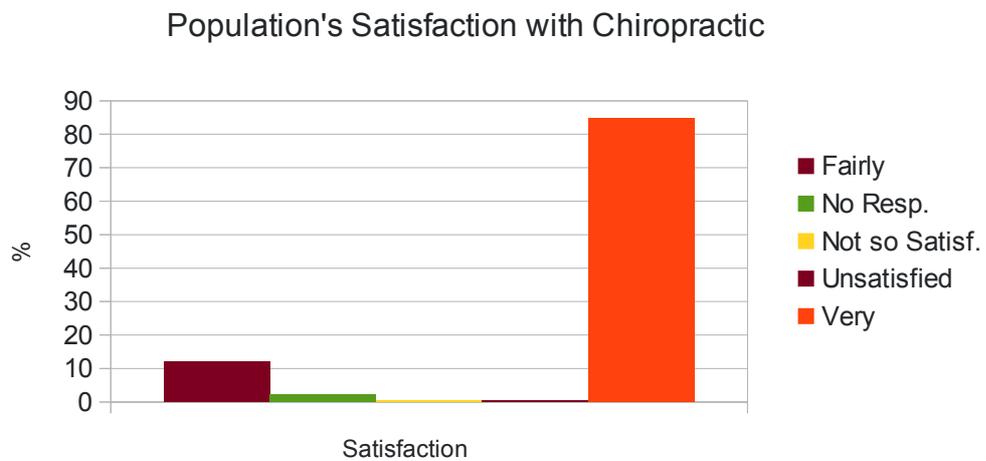
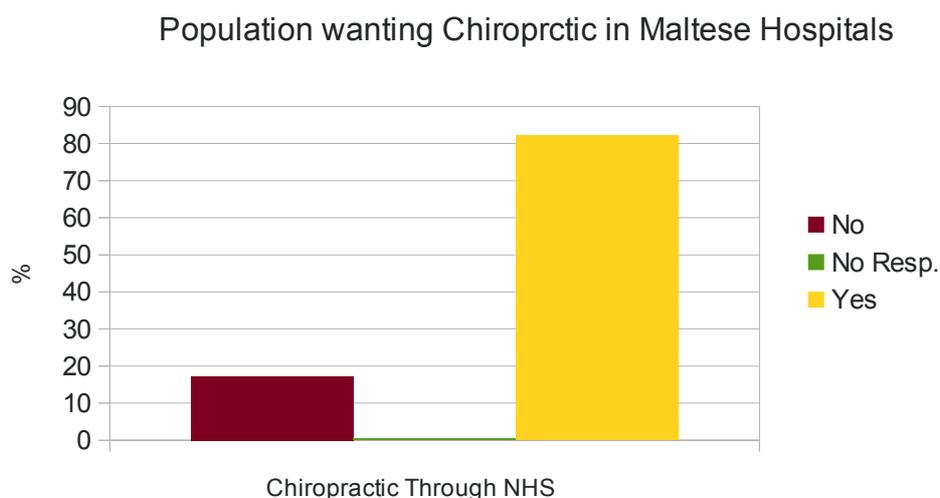


Fig. 18: Population's desire to Find Chiropractic through the Maltese NHS



3.8 Statistical Significance

Subset data was extracted as following:

4. age and satisfaction,
5. gender and satisfaction,
6. presenting complaint³ and satisfaction,
7. number of visits and satisfaction.

Table 1,2,3,and 4 show the contingency tables created according to the above subset data.

Table 1: Contingency table for age and satisfaction

	Fairly	No Resp	Not So Satisfied	Unsatisfied	Very Satisfied
10 - 25	3	0	0	0	15
25 - 45	9	1	1	0	90
45 - 65	11	2	0	0	68
65+	4	2	0	0	18

Table 2: Contingency table for gender and satisfaction

	Fairly	No Resp	Not So Satisfied	Unsatisfied	Very Satisfied
F	13	5	0	0	106
M	14	0	1	1	83

³ Combination of more than one complaint, i.e. lower back&headache and/or neck&shoulder, were not included in the table for ease of calculation

Table 3: Contingency table for complaint and satisfaction

	Fairly	No Resp	Not So Satisfied	Unsatisfied	Very Satisfied
HA	1	0	0	0	9
LB	14	1	1	0	83
Neck	1	3	0	0	17
Shoulder	3	0	0	0	8

HA=Headache, LB=Lower Back Pain

Table 4: Contingency table for number of visits and satisfaction

	Fairly	No Resp	Not So Satisfied	Unsatisfied	Very Satisfied
<4	13	1	0	1	126
>4	7	1	0	0	51
1	7	2	1	0	12

To statistically interpret the overall patient's satisfaction, tables 1,2,3, and 4 (above) were used to determine the independence between variables such as age, gender, presenting complaint and number of visit. Since, none of these tables had all cells containing a frequency count of 5, Fisher' exact test was used to maximize validity. A confidence level of 95% was used. Below are the respective findings:

- Age / Satisfaction: P-value = 0.2064 (independent)
- Gender / Satisfaction: P-value = 0.7475 (independent)
- Presenting Complaint / Satisfaction: P-value = 0.1386 (dependent)
- Number of Visit / Satisfaction: P-value = 0.001157 (dependent)

4 CONCLUSION

The expected prevalence of musculoskeletal conditions, in Malta and, perhaps, the ineffectiveness of other therapies and medication to manage such conditions i.e. neck and lower back pain, has taken a high number of Maltese patients to try chiropractic care as a last resort.

Regardless of age and sex, it appears that the population visiting a chiropractic clinic in Malta is satisfied with the outcome of their management plan. However, this satisfaction level seems to be dependent on factors such as presenting complaint and number of attended visits.

Overall, patient's satisfaction seems to be the result of several factors such as home care involvement and the ability to correctly diagnose and manage the presenting complaint. This is further backed by the general favorable support for chiropractic services to be found through the Maltese National Health System. More randomized controlled studies are needed to verify these findings.

5 DISCUSSION

Chiropractors receive extensive training and, have great knowledge of, the nervous system, both central and peripheral, and as such they are aware of referred pain presentations; a very common case would be the often wrongly reported “sciatica” complaint or “intervertebral disc dysfunction” when, most often than not, it is simply an irritation of the sacroiliac joint (SIJ), also known to many professionals as sacroiliitis. This is due to the common sacral dorsal rami innervating the SIJ which also contribute to the formation of the sciatic nerve, (Fortin, *et.al.*, 1999). Other common presentations such as neck and shoulder complaints are taken in to consideration similarly, since the brachial plexus has an analogous complexity. Chiropractic spinal manipulation has been demonstrated to be an effective therapeutic technique for such joint dysfunctions.

Low back pain (LBP) is the single largest cause of disability worldwide (Murray, Ezzati, et al., 2012); this data is reflected within the Maltese population (LBP 43%) although, this number almost doubles when LBP is coupled with other complaints such a mid-back or calf pain. Considering that the lumbar-sacral plexus is composed of several nerve roots (from T12 to S3 and, other rootlets contribution from the lower levels) this is of no surprise to any chiropractic practitioner.

In a survey and literature review study, carried out by Gaumer (2006), on factors associated with patient satisfaction with chiropractic care, it was concluded that doctor's communication was the only consistent predictor for patient's general satisfaction level. However, it is arguable that the chiropractor’s ability to quickly and, correctly, diagnose such dysfunctions plays a defining role which drives the overall satisfaction.

5.1 Government Studies

The US Agency on Health Care Policy and Research Study (AHCPR), of the Department of Health and Human Services, released on December 8 1994, the Clinical Practice Guidelines for the management of acute low back pain (Bigos, *et al.*, 1994). Their guidelines were developed after extensive study of diagnostic and treatment methods for acute low back pain and, were created by the AHCPR panel to provide primary care clinicians with information and recommended strategies for the assessment and treatment of acute low back problems. The AHCPR panel was made up of 23 members consisting of medical doctors, chiropractic doctors, nurses, experts in spinal research, physical therapists, an occupational therapist, a psychologist, and a consumer representative. It was concluded that conservative treatment such as spinal manipulation should be pursued in most cases before considering surgical intervention and, prescription drugs such as oral steroids, antidepressant medications and colchicine are not recommended for acute low back problems.

In 1993, the Ontario Ministry of Health recommended the management of low back pain be moved from medical doctors to chiropractic doctors. The recommendation was drawn by the “Manga Report” after the publication of one of the largest existing analysis of scientific literature on low back pain (Manga *et al.*, 1993). The study evaluated different types of treatments for low back pain in the effort to reduce and contain Canadian health care cost. Their findings showed that chiropractic manipulation was the most cost effective and efficacious care for low back pain. Furthermore, the researchers also stated that the studies on the prevalence and incidence of low back pain suggest that it is the leading cause of disability

and morbidity in middle-aged persons⁴ and, by far, the most expensive source of workers' compensation costs North America.

The New Zealand Commission Report (1979), the Sweden Report (1987) and the Australia Report (1986), also show analogous findings and make similar suggestion to their respective Governments resulting in official legislation being obtained in Sweden recognizing and regulating the chiropractic profession (*Chapman-SMith, 2005*) and, the Committee's recommendation for funding for chiropractic in hospitals and other public institutions in Australia (*Australia Report, 1986*).

5.2 Chiropractic Effectiveness

The biggest study on the effectiveness of spinal manipulation was carried out by Bronfort *et al.* (2010). Their conclusions were based on the results of systematic reviews of randomized clinical trials (RCTs), widely accepted and primarily UK and United States evidence-based clinical guidelines, plus the results of all RCTs not yet included in the first three categories. The strength/quality of the evidence regarding effectiveness was based on an adapted version of the grading system developed by the US Preventive Services Task Force and a study risk of bias assessment tool for the recent RCTs. They concluded that spinal manipulation /mobilization is a) effective in adults for acute, subacute, and chronic low back pain; migraine and cervicogenic headache; cervicogenic dizziness and, for several extremity joint conditions and for acute/subacute neck pain; b) not effective in older adults and children, respectively, for cervical manipulation/mobilization alone for neck pain of any duration, and for manipulation/mobilization for midback pain, sciatica, tension-type headache, coccydynia, temporo-mandibular joint disorders, fibromyalgia, premenstrual syndrome, and pneumonia and, for infantile colic and asthma, when compared to sham manipulation; c) inconclusive for otitis media and enuresis.

In Norway, Roar *et al.* (2013), carried a National study to investigate the benefits of chiropractic availability in a Public Central hospital. They arranged for close cooperation between a medical hospital staff and chiropractors. Major patient advantages were achieved, particularly concerning cooperation with the orthopedic and ENT departments. Treatment of functional lumbo-sacral fixation with its accompanying sciatic-like pain, peripheral nerve entrapment with local and referred pain as well as tinnitus, facial pain, ear plug, swallowing difficulties and vertigo were the main successful outcomes. They concluded that doctors should handle structural lesions whilst chiropractors can solve functional based problems resulting in potential savings in public budgets from large scale cooperation although, yet to be determined.

5.3 Strengths and limitations of the study

Although validated by professionals, the questionnaire was not of standard design previously used for this type of patient's satisfaction rate. Perhaps, questions such as reduction of pain intensity and/or degree of resolution of the condition would have strengthened its validity; however, the number of variables would also have increased significantly leading to

4 This has been confirmed by the recent, 2012, and world biggest research on global disability carried by the WHO, the Global Burden of Disease (GBD). The GBD findings show that musculoskeletal disease (MSD), is the second cause of disability worldwide, with lower back pain being the highest of the MSD group.

awkward statistical test and questionable reliability. Furthermore, there is a likelihood of bias towards patients with a positive experience of chiropractic.

Nevertheless, the generalized source and conclusion of this paper reflects other sources worldwide such as the study carried out in UK, published in Jan/2015, observing patients' experiences and expectations of chiropractic care (MacPherson *et al.*, 2015).

5.4 Clinical and Practice Adaptation

These types of musculoskeletal complaints seem to have been affecting the world economy in the last decade as reported by the Global Burden of Disease 2010 which concluded that MSK was the second highest cause of disability worldwide.

Sources from the European Musculoskeletal Health in Europe, Reportv5.0, estimate that, in 2009, Malta had 1.1 cases of musculoskeletal condition per day for 1000 population with an in-patient average of 3.5; the average length of hospital stay for such condition was of 6.8 days. These conditions include joint pain, spinal disorders such as low back pain and, musculoskeletal injuries such as strains and sprains often related to occupation or sports (Eurostat, 2009).

As a reflection of this, a study published in the Malta Medical Journal, showed that the majority of the patients complaining of lower back pain, seen at the outpatient clinic could have been managed in the primary care setting (*Cuschieri, Grech, Borg, 2014*). The study calls for the importance of developing local management guidelines for low back pain which would aid the general practitioner in the management of low back pain cases.

It would be fair to claim that primary spinal care practitioners such as chiropractors deserve a strong consideration from the Maltese National Health System with regard to developing such guidelines.

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