

Care Satisfaction and Employment Following
Thoracolumbar Fractures: Long Term Follow Up
Greater Than 5 Years

Satisfaction regarding spinal fracture care

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Ethical approval not required.

Abstract

As part of a study looking into the employment following a thoracolumbar fracture with a greater than 5 year follow up, we simultaneously investigated the reported satisfaction of patients and the care they received. The aim of this is to see if there are any areas that the treatment given by the spinal orthopaedic team from Cardiff and Vale could improve on. A total of 234 patients were suitable for our study after the inclusion criteria of: fracture between the years of 2013-2018, acute/traumatic cause and aged between 18-65 was applied. A questionnaire was then mailed to them followed by a phone call 1-2 weeks later. Of the 234 patients identified we received 23 replies 21 via postal returns and 2 from phoning the patients. The mean satisfaction found was 70.5% with answers ranging from the full 0-100% mark. It was determined, there was no significant difference between the age at injury, gender, management, number of fractures and mechanism of injury for a patient to put a satisfaction of either 100% or $\leq 50\%$. Some suggestions written by patients on what would improve their treatment was more/improved after care following discharge from the hospital with 43% wanting more pain/spasm management and 39% patients wanting more physiotherapy. With this information it may be useful for patients following a thoracolumbar fracture to receive a longer follow up period with other healthcare specialities.

Introduction

As part of our study looking into employment following an acute traumatic thoracolumbar fracture with a greater than 5 year follow up period we also deemed it important to look at the patients satisfaction regarding their care and treatment. Despite there being lots of studies regarding treatment options and long-term outcomes (1-6), however there is very little data looking at a patient's perspective of the care they receive. With the results we aim to see if any area within the Cardiff and Vale spinal care plan could be improved or changed for the benefit of the patient. We will also check whether there are any factors contributing to a higher or lower overall satisfaction.

Method

For our study we were looking for participants that had an acute form of thoracolumbar fracture between 01/01/2013 and 31/12/2018 with an age range between 18-50. We then later expanded this criteria to include patients between the ages of 50-65 as this is the current age most people retire from work. All patients included had to be treated by the spinal orthopaedic team from the Cardiff and Vale area. The patients suitable for our study were found by searching through multiple excel worksheets of spinal imaging (MRI, CT and X-ray) requested by the emergency and orthopaedic departments from University Hospital of Wales (UHW). Another source of finding appropriate patients was searching the spinal operations list, where we could find anyone who had been operated on secondary to a thoracolumbar fracture. At this point we had a list of 24,110 patients. Next, we had to exclude any patients that had a non-traumatic cause, this includes osteoporotic, osteopenic or malignant fractures. This was achieved by using the electronic medical records, Welsh clinical portal (WCP), to look through any clinic and imaging notes to determine the cause of the fracture and remove any patients that had died. From the patients identified we had to exclude any that had a non-structural fracture using the AO spine thoracolumbar injury classification resulting in any A0 fractures being removed (7-9). This ultimately left us with a group consisting of 234 patients.

Having identified our list of patients, we sent out a questionnaire via the post to the address they had recorded on WCP including a cover letter and phone letter. This phone letter described how we would be contacting the patient via telephone call within 1-2 weeks of sending out the questionnaire. The aim of phoning the patient was to check the patient had a) received the questionnaire and b) if needed complete a shortened version of the questionnaire over the phone. The satisfaction section of the questionnaire consists of 2 questions, a 0-100 scale for a patient to mark their overall satisfaction regarding their treatment, with 0 being not satisfied at all and 100 being completely satisfied. There was a

text box below this scale allowing the patient to give a brief description of why they chose their answer.

Results

Of the 234 patients in our final list as of 21/06/2023 we had a total of 23 replies to our questionnaire, 21 via the postal questionnaire and 2 from the phone edition of our questionnaire, see Figure 1.

Of the patients that replied 15 (65%) were Male and 8 were Female (35%), this is almost identical to our overall cohort of patients with Males equaling 66% and Females consisting of 34%. Those who suffered only a single fracture made up 15 of the 23 responses (65%) and those who had multiple fractures was 8 (35%). With regards to the mechanism of injury 7 (30%) patients were involved in a road traffic collision (RTC), 6 (26%) had unrecorded causes on WCP, another 6 (26%) were caused by some form of a fall, and the last 4 (17%) have been categorised as “other”. These other causes include bicycle accident, rugby tackle and suicide attempt. The mean age of those who responded was 38 compared to the cohorts 42 (rounded to the nearest whole number). Surgical management was given to 18 (78%) of patients, a brace alone was fitted for 1 patient (4%) and conservative management was used for 4 patients (18%). The mean follow up time of the patients that responded was slightly higher at 7.65 years compared to the cohorts 7.42 years. The mean satisfaction reported by patients was 70.5% and replies ranged from 0-100% see Figure 2.

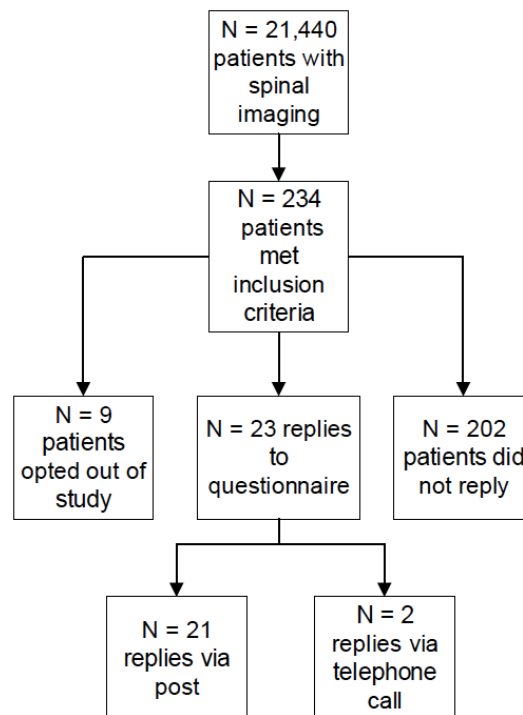


Figure 1. Flow chart to show our current replies

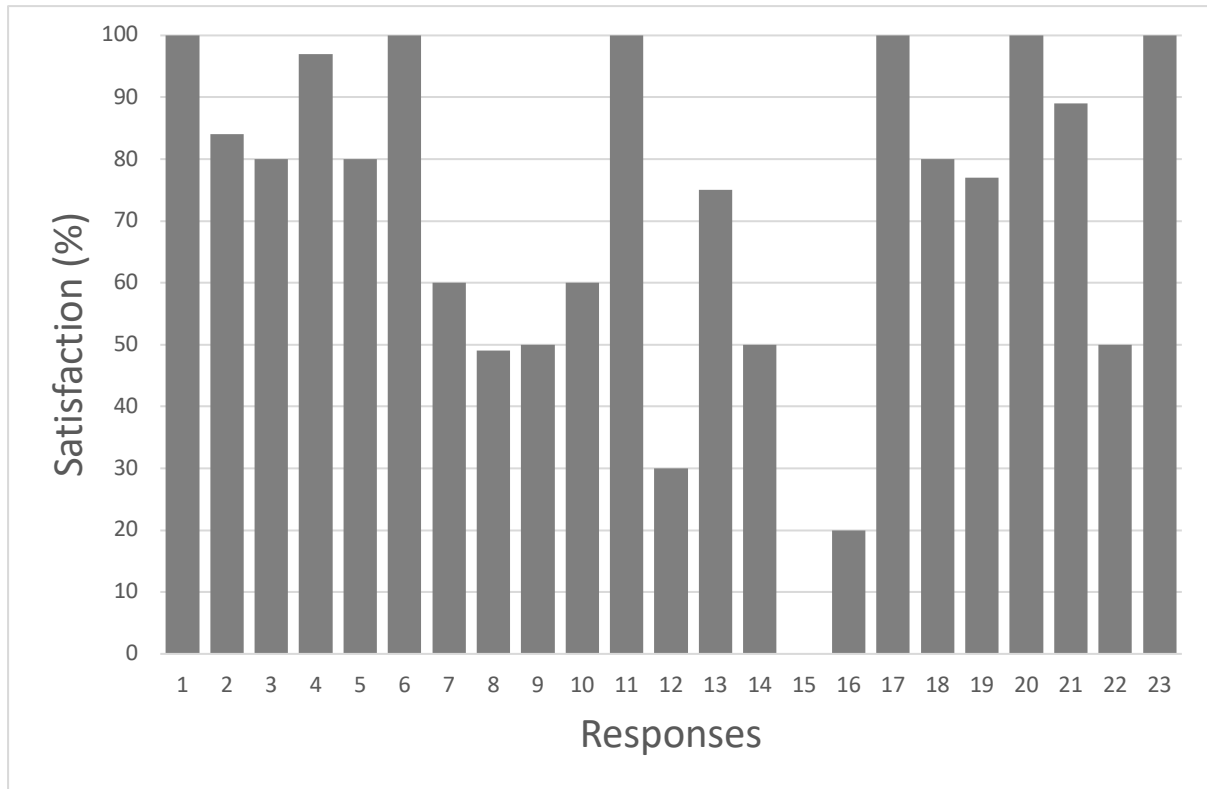


Figure 2. A Graph to show Satisfaction (%) against responses

Discussion

From our data we can see that it is possible for patients to be fully satisfied with their treatment however, we aim for all patients to have a satisfaction of 100% for their care. In this section we will look to see if there is any correlation between certain factors that may influence a patient’s satisfaction and what the most common answers were for how their care could have been improved.

Satisfaction:

As a total of 6 patients (23%) rated their satisfaction at 100% and 7 patients (30%) ≤ 50 we decided to compare the 2 data sets to see if there were any outstanding factors contributing to this (Table 1). The mean age at time of injury of those who gave a satisfaction of 100 (35.3 years) was lower than that of those who gave a satisfaction of ≤ 50 (44.1 years). Using a two tailed unpaired t test a p value of 0.1452 was calculated showing no significant difference between the two groups ages. Of all the other categories chosen: Gender, management, number of fractures and mechanism of fractures were compared using a Fischer’s exact test with a 95% confidence level. The p values calculated were 1.00, 1.00, 1.00 and 0.586 respectively. Therefore, there is no significant difference between any of these categories.

Table 1. Satisfaction of 100 and ≤ 50 compared (n = 23)

	Satisfaction 100%	Satisfaction $\leq 50\%$	All replies	P value
Age at injury (years)				
Mean (SD)	35.3 (13.6)	44.1 (5.7)	37.8 (10.4)	p = 0.1452
Gender				
Male n (%)	3 (50%)	3 (43%)	15 (65%)	p = 1.000
Female n (%)	3 (50%)	4 (57%)	8 (35%)	
Management				
Surgical n (%)	5 (83%)	5 (71%)	18 (78%)	p = 1.000
Brace n (%)	1 (17%)	2 (29%)	1 (4%)	
Conservative n (%)	0 (0%)	0 (0%)	4 (18%)	
Number of fractures				
Single n (%)	5 (83%)	4 (57%)	15 (65%)	p=1.000
Multiple n (%)	1 (17%)	3 (43%)	8 (35%)	
Mechanism of injury				
RTC n (%)	2 (33%)	2 (29%)	7 (30%)	P=0.586
Unknown n (%)	2 (33%)	2 (29%)	6 (26%)	
Fall n (%)	1 (17%)	3 (43%)	6 (26%)	
Other n (%)	1 (17%)	0 (0%)	4 (18%)	

Fischer's exact test with a 95% confidence interval was used for categorical variables. A two-tailed unpaired t test was used to compare independent groups.

Improvements:

For those that put their satisfaction lower than 100% we went through their brief descriptions and found that the most common answer was that despite a good initial treatment and response to the accident their follow up care could have been improved. This can be seen with these quotes, "the follow up could be better", "I did find aftercare was non-existent" and "Outpatient care (physio) could have been increased, but was ok". These all point to a need of increase in after care that is tailored to the patient's needs. In our questionnaire there was a section dedicated to what therapies patients would have wanted during their care. Of the therapies listed 43% wanted pain/spasm management, 39% wanted physiotherapy, 22% wanted more education on their injury and bowel/bladder management. A study by Briem et al (10), showed that patients with a mean follow up of 5.3 years \pm 1.7 years had a lower quality of life, including pain, compared to their healthy counterparts, this is supported by other studies (11-13). Therefore, this can be interpreted that patients wish for complete resolution of their back pain despite intervention being given, as everyone had some form of analgesia bar 2 patients who received none. When looking at the patients request for physiotherapy 19 of the 23 patients (83%) received some form of physiotherapy. I believe that that the 39% of patients that wanted physiotherapy perhaps wished for more time with the physiotherapists as this is when they felt they had the most success with their treatment.

Mental health awareness is becoming an increasing issue in everyday life with it gaining a lot of focus. A large part of mental health issues is that of attempted suicide with many people attempting to end their lives by purposefully jumping from a high building or bridge (14). A common complications of this is a fracture to the spine particularly in the thoracolumbar region (15, 16), therefore this is an area of treatment and care that may need to be investigated. Only one of the responses we received (9%) was due to a suicide attempt, and they described that during their stay in the hospital they were given no follow up regarding their mental health. They also state that this could have had lethal consequences and felt it was a failure of the hospital's duty of care. This is an important

factor to consider as you can mend and fix someone physically but if they are still struggling with mental health issues it may impact on how they perceive their outcome. From this we can understand it is imperative to get a psychiatric review for every patient that presents secondary to an attempt on their own life.

Despite all these improvements the patients recommended most were satisfied with the care they received for their spinal fracture and were thankful to the surgeons for giving them some form of independence back.

Complications

As with all studies undertaken, we encountered some problems when it came to interpreting our results. The most common problem was related to the replies via the post and the 0-100 scales, where a patient was instructed to mark precisely on the scale their answer. However, many patients drew a circle as their answer on the scale. This was easy to interpret if they circled the number below the scale itself however if it was between 2 numbers it made it very difficult to decipher the precise number the patient intended to put down. Another problem we encountered with the replies was one of the individuals drew 2 numbers on their overall satisfaction scale. This made it hard to decide which of the 2 responses we should record down on our database. In the end we chose the lower number as we felt their treatment at its worst is the area that could be improved upon the most.

Conclusion

In conclusion, patients that suffered from a thoracolumbar fracture and were treated in the Cardiff and Vale spinal department there was no impact on satisfaction with care regarding Age at injury, Gender, Management, Number of fractures and Mechanism of injury. The area of care that patients felt could be improved upon most was that of the after care they received following the fracture, with many patients requesting more physiotherapy and pain management.

The next step is to wait for more replies to come back to increase our sample size and interpret the data.

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