

Prevalence, Severity and Career Specific Characteristics Associated with Low Back Pain in Rehabilitation Staff

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Introduction

- Low back pain (LBP) affects 70-85% of adults annually and accounts for approximately 149 million days of lost work, with total cost estimates, including lost wages to be between \$100 and \$200 billion annually in the United States.
- Rehabilitation staff perform activities, such as bending, lifting heavy objects, and patient handling that may contribute to the development of LBP.
- The prevalence of LBP amongst nurses is well documented in the current literature, LBP research relating to rehabilitation staff is sparse and limited.

Objectives

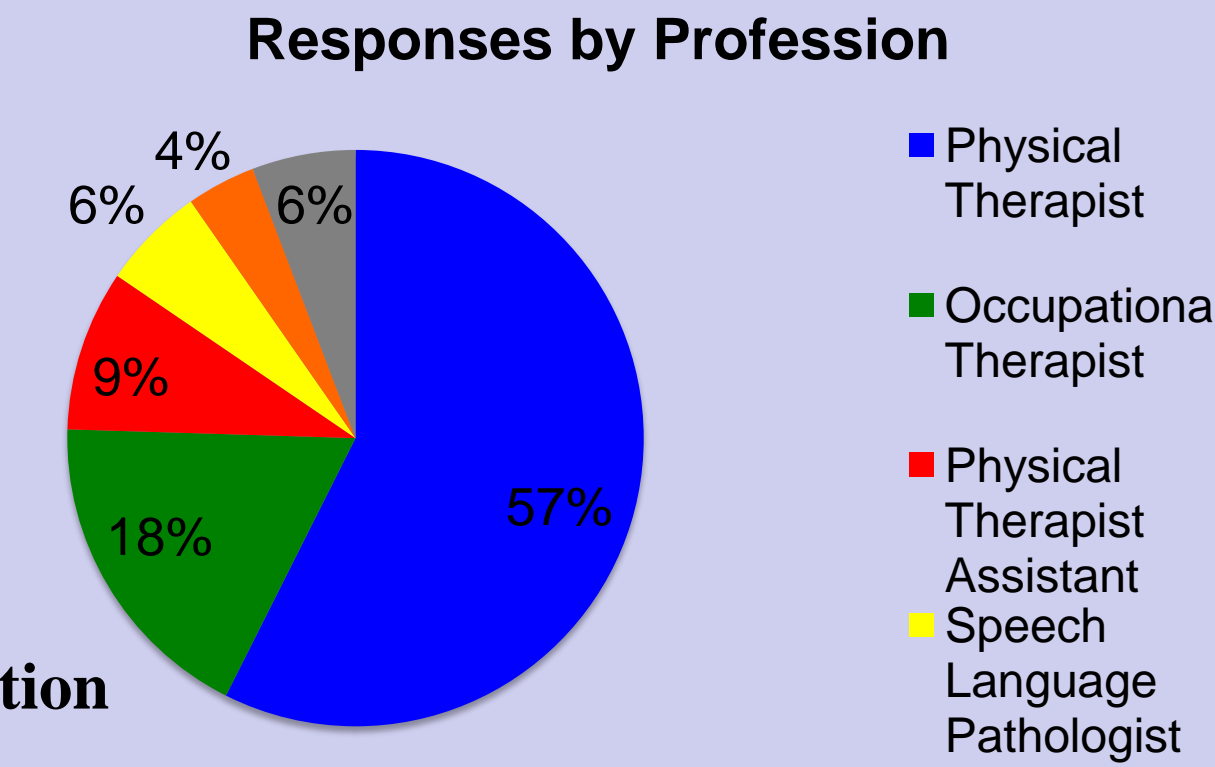
- To identify the prevalence and severity of LBP among rehabilitation staff members in a large healthcare system, and to identify potential career specific characteristics that may be associated with the presence of LBP.
- Publish the findings of this study in order to educate those who work in rehabilitation on the prevalence and severity of LBP in their profession.
- To identify a potential need for increased education on body mechanics by healthcare systems to those in the rehabilitation department.

Methods

- The target population of this study was the 457 employees in the rehabilitation department of a large healthcare system in Southwest Florida.
- This included: physical therapists, physical therapist assistants, occupational therapists, certified occupational therapy assistants, speech language pathologists, rehabilitation techs and administrative professionals.
- A survey created by the researchers was used as the primary tool in collecting data with the modified Oswestry Disability Index (ODI) included to assess severity of LBP.
- The ODI was chosen as it is a commonly used outcome measure to assess severity of LBP and has been extensively tested and has excellent test-retest reliability, which indicates adequate consistency
- Informed consent was included at the beginning of the survey and completed by each study participant electronically prior to availability and completion of the survey.
- The online survey was sent to 457 rehabilitation department employee email addresses from a local health care system database through Checkbox, a survey program made available to students through FGCU.
- Data was submitted to and stored in Checkbox, all responses remaining anonymous.

Results

- Out of the 429 email addresses a total of 147 survey responses were received over a 14-week time span, resulting in a 34.26% return rate.
- Of these 147 responses, 79.16% were female and 20.84% were male. The average age was 42 years old. The average number of years worked was 16.93. The average hours reported were 8.67 hours/day and 39.49 hours/week.
- There was an uneven response rate across professional disciplines:



Analysis Results Related to each Research Question

1. The prevalence and severity of LBP in those working in a rehabilitation department:

Prevalence and Severity	Percent of Rehabilitation Staff
Prevalence (LBP in the last 12 months)	68.02%
Severity (% Disability)	5.70%

1. Prevalence and severity of LBP of each individual profession: **there was a statistically significant difference identified between severity of LBP and profession.**

Profession	Prevalence	Severity
Physical Therapist	65.5%	3.78%
Physical Therapist Assistant	84.6%	9.08%
Occupational Therapist	62.5%	5.52%
Speech Language Pathologist	55.5%	7.5%
Administrative Staff	88.9%	18%
Rehabilitation Tech	100%	6.8%

(I)Profession	(J)Profession	Mean difference (I-J)	Std. Error	Sig.
PT	OT	.812	.926	.952
	PTA	-2.642	1.194	.239
	SLP	-1.992	1.406	.717
	Tech	-1.503	1.847	.965
	ADM	-6.437*	1.406	.000
OT	PT	.812	.926	.952
	PTA	-1.830	1.383	.772
	SLP	-1.181	1.570	.975
	Tech	-.692	1.974	.999
	ADM	-5.625*	1.570	.006

1. Prevalence and severity of LBP in differing rehabilitation settings: **no statistically significant difference was identified between prevalence or severity and setting.**

Setting	Prevalence	Severity
Acute Care Hospital	68.2%	5.55%
Outpatient	71.2%	6.12%
Inpatient Rehab Facility	61.5%	3.38%
Skilled Nursing Facility	25.0%	1.00%
Home Health	80.0%	7.33%
Other	2.0%	5.2%

1. Prevalence and severity of LBP in staff working with different patient populations: **no statistically significant difference was identified between prevalence or severity and patient populations.**

Patient Population	Prevalence	Severity
Neurologic	77.3%	4.73%
Pediatric	55.6%	6.82%
Orthopedic	75.6%	6.00%
Geriatric	67.7%	6.52%
Cardiopulmonary	50.0%	1.80%
Manual Therapy	71.4%	6.86%
Vestibular/Balance	75%	2.5%

1. Prevalence and severity of LBP associated with level of education: **there was a statistically significant difference in severity of LBP and educational level.**

Highest Education	Prevalence	Severity
High School	100%	9.67%
Associate's Degree	100%	16.91%
Bachelor's Degree	60.6%	7.21%
Master's Degree	60.5%	5.05%
Doctorate Degree	69.6%	2.71%

(I)Education	(J)Education	Mean difference (I-J)	Std. Error	Sig.
Assoc.	Assoc	3.621	1.986	.454
	BA	4.848*	1.363	.007
	MA	5.928*	1.340	.000
	Doctorate	7.097*	1.291	.000
	Other	6.955	3.008	.196

- Analysis results related to other demographic and career specific characteristics that may have an influence on LBP:

Demographic	P-Value	Correlation Coefficient (rs)
Prevalence vs. Age	0.029	0.180
Prevalence vs. Years worked	0.026	0.184

Demographic	P-Value	Correlation Coefficient (rs)
Severity vs. Body Mechanics Education	0.017	0.196
Severity vs. # of Exercise Days	0.018	0.196

Data Analysis

- Completed using SPSS Statistics and Checkbox software.
- CI= 95%, $\alpha = 0.05$: If the level of significance (p-value) was less than 0.05, the relationship between variables was considered to have statistical significance.
- Descriptive statistics: used to determine the prevalence of LBP amongst those working in the rehabilitation setting.
- Severity: calculated by dividing the raw scores from the modified ODI by 50 then multiplying by 100 to obtain a percent of disability. The average percent of disability was then calculated.
- Kruskal-Wallis: used to determine if there was a statistically significant difference between prevalence and each category investigated.
- ANOVA: used to determine if there was a statistically significant difference between severity and each category investigated.
- Tukey post-hoc: used to determine between which categories statistically significant differences were found.
- Spearman's Rho: used to identify other demographic and career specific characteristics that may be correlated with LBP.

Discussion

- Rehabilitation technicians and administrative staff had the highest prevalence of LBP. Administrative staff also presented with the highest severity of LBP.
- Severity of LBP of administrative staff compared to that of PTs and OTs is significant, this can be explained through higher education levels of PTs and which includes that of body mechanics and ergonomics.
- Statistically significant findings in severity of LBP were found between those with Associates level education compared to Masters and Doctorate levels indicating increased education may have an effect on lowering the severity of LBP.
- A limitation of this study was the unequal number of responses received from each professional category; for example, there were no participants who work as COTAs, so there was no data regarding this population. More than half of the survey responses were from Physical Therapists, leaving the rest of the data limited in comparison.

Conclusions

The results of this study suggest that those with higher levels of education suffer less severe LBP. The professions of PT and OT require the highest levels of education, including a more comprehensive education on body mechanics and musculoskeletal anatomy. Those with lower education levels were found to have increased severity and high prevalence rates of LBP; this population stated that they felt their education on body mechanics was inadequate and that they would benefit from additional education in this area. The researchers concluded that increasing the amount of education on body mechanics for rehabilitation staff could have an effect on decreasing the severity of LBP. These results leave room for future research into preventative steps that could be taken by employers to reduce the severity of LBP present in their rehabilitative staff.