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Perceived Value of Acute Care Physical Therapy

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PERCEIVED VALUE OF ACUTE CARE PHYSICAL THERAPY

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ABSTRACT

Background/Significance/Objective

Although there is some research regarding physical therapy in the acute hospital setting, much of it is focused on the role physical therapists play with specific patient populations or diagnoses. By understanding more about how physical therapy services can add value in the acute hospital, their skills could be better utilized to maximize benefit for both individual patients and the hospital. The purpose of this study was to investigate the perceived value that physical therapists bring to the acute care hospital from the perspective of both physical therapists and their supervisors in Southern Nevada.

Methods

This study used an online survey to assess perceptions of value among physical therapists and their supervisors working in acute hospitals in Southern Nevada. Both groups of participants were asked to answer questions regarding the ideal methods for measuring value, how value is currently measured, ways to increase value, the value of physical therapist involvement in wound care, and more.

Results

Participants included 25 physical therapists and 2 supervisors. Despite some variability, the two groups agreed on many of the statements such as length of stay and readmission rates as useful measurements of value and being a role model for other

physical therapists and mentoring new graduates are effective ways physical therapists can increase their value.

Discussion

Physical therapists and their supervisors found value in acute care physical therapy and agreed in most areas. Physical therapists found the most value in educating patients and assisting with functional limitations. Both therapists and supervisors felt that value was best assessed through length of stay and readmission rates and did not see as much value in assessment through the use of billable units. The survey revealed that both groups felt that physical therapists could add the most value by being a role model for or mentoring new therapists.

Keywords

Value, acute care, physical therapy, length of stay, wound care

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INTRODUCTION

Physical therapists make up one piece of the interdisciplinary team working in hospitals. Physical therapists will examine patients, provide education, set goals, and create plans to improve strength, endurance, and overall function with the goal of improving functional mobility to promote safe discharge (Jette et al., 2009; Masley et al., 2011; Gorman et al., 2010). Because physical therapists are one part of a large team working in the hospital and physical therapy is not prescribed in a uniform fashion across all hospitals, it can be difficult to discern the specific value they add to the team (Freburger et al., 2012). Multiple studies have aimed to demonstrate the roles physical therapists play in the hospital setting, and various studies describe value in very specific populations or with specific treatments; however, few illustrate the overall value that physical therapists bring to the setting and what aspects of their job offer the most value (Phillips et al., 2020, Curry et al., 2018, Langhorne et al., 2018; Anderson & Biely, 2020, Needham et al., 2010; Schweickert et al., 2009; Li et al., 2013; Engel et al., 2013, Johnso et al., 2017; Kayambu et al., 2013). There are even fewer studies that have sought out the therapist or supervisor perspective of what value physical therapists can offer to the hospital setting.

To fully understand the perceived value of acute hospital physical therapists, it is important to first define value. Michael Porter describes value as “health outcomes achieved per dollar spent” (Porter, 2010). He suggests that value in health care should be based on outcomes and not just the amount of time spent with the patient or the amount of treatment provided (Porter, 2010). More recently, a study used Porter’s definition in combination with hours worked and an average hourly cost to build the

Therapy Value Quotient (TVQ) (Hull & Thut, 2018). This equation was designed specifically for acute care physical therapy teams and their employers in the hospital setting to encourage value-based patient care (Hull & Thut, 2018). This new equation quantifies the idea of value and integrates both hours worked and outcomes. Though these equations offer insight into physical therapist value in relationship to patient physical function, it does not account for areas physical therapists may add value that do not directly correlate to patient function. Porter and Hull have created a good starting point for measuring therapy value in the hospital, however there is still a gap in applying this quotient, or other potential definitions of value, to the current state of practice of acute care physical therapy.

The current evidence regarding physical therapists in the acute hospital setting is mostly focused on the services that physical therapists provide and the benefits of physical therapy in very specific populations such as patients who have undergone total joint surgeries, mobilizing post stroke, and patients in the ICU. The literature currently includes information about what the job of the acute care physical therapist entails. Multiple sources discuss that physical therapists integrate medical information and physical therapy knowledge to evaluate patients, set goals, and provide intervention (Jette et al., 2009; Masley et al., 2011). Acute care physical therapists are also required to communicate and collaborate efficiently with other healthcare professionals as part of the medical team (Masley et al., 2011; Gorman et al., 2010). Physical therapists in an acute care hospital will typically work with a variety of populations including patients with musculoskeletal, pulmonary, and neurological impairments as well as those with infections and general deconditioning (Gorman et al., 2010). Though a general

description of the role of the physical therapist in an acute care hospital exists, it is more challenging to find uniformity in treatment information such as frequency and duration of visits or number of patients seen (Jette et al., 2009). The literature indicates that there is currently a lack of consistency in the distribution of physical therapy services across hospitals, which creates one barrier to fully understanding the value physical therapists bring to the setting.

The literature that currently exists pertaining to the benefit of acute care physical therapists is targeted to specific populations. Physical therapists can improve outcomes in post-operative care of joint replacements by mobilizing the patients soon after their surgery. Patients that participated in physical therapy the day of their surgery have increased likelihood to discharge home and decreased length of stay (Tsirakidis et al., 2020; Phillips et al., 2020). Physical therapy in the hospital also improves range of motion, strength, balance, and gait after total joint replacements (Curry et al., 2018). Physical therapists can also improve outcomes when working with patients who have suffered a stroke. Physical therapists have demonstrated the ability to decrease length of stay and improve activities of daily living by mobilizing the patient early (Langhorne et al., 2018; Anderson & Biely, 2020). Studies have also demonstrated that physical therapists also add benefit in the intensive care unit (ICU). A study by Kayambu et al. found that patients that received physical therapy in the ICU had improved quality of life, physical function, peripheral muscle strength, and respiratory muscle strength as well as decreased hospital length of stay and time on a ventilator. Physical therapists have also been able to reduce delirium, decrease time in the ICU, and accelerate return to independent functional status for patients in the ICU (Needham et al., 2010;

Schweickert et al., 2009; Li et al., 2013; Engel et al., 2013). Outside of these specific patient populations, there is limited research that describes the impact that physical therapists have in hospital settings. These studies also did not look directly into the economic benefits physical therapists may have in the hospital setting, only the implied value they have due to decreasing length of stay and improved outcomes.

Physical therapists may also add benefit to the acute hospital setting by offering non-traditional services such as wound care. Medicare cost projections for all wounds ranged from $28.1 billion to $96.8 billion, including costs for infection management, among which surgical wounds and diabetic ulcers were the most expensive to treat (Nussbaum et al., 2018). Physical therapists are educated in wound care and some even get clinical training in this specialty (Moore et al., 2020). Physical therapists are trained to be able to provide wound care in the hospital (Woelfel & Gibbs, 2017) and can become certified in wound care through the American Physical Therapy Association or through the American Board of Wound Management. Though physical therapists are trained in wound care, there is a lack of studies that evaluate the value of having physical therapists performing wound care in the hospital.

Understanding the value physical therapists can bring to the hospital setting is important due to the current prospective payment model. Under this model, the hospital is not compensated separately for the individual services the physical therapist provides, but rather is paid a lump sum for all provided care patients receive during their hospital stay (Center for Medicare and Medicaid Services, 2021). Ultimately, the hospital is reimbursed the same amount whether or not the patient is seen by the physical therapist. It is important to understand the areas that physical therapists can

reduce overall costs for the hospital to support the utilization of their services and overall value to the hospital. It is also important to ensure the therapists' skills are utilized appropriately and efficiently to maximize the benefit they can bring.

In this study we aim to gather the perspectives of Southern Nevada physical therapists and their employers on the value these two groups believe physical therapists bring to the hospital. Our hypothesis is that physical therapists and their employers perceive value in specific services provided by physical therapists. We expect the perceived value of both therapists and their employers will differ from the way therapist work is currently measured in the hospital. We also believe there will be some differences between the perception of value from the viewpoint of the physical therapist compared to the employers.

METHODS

Survey Development

To assess our hypothesis, a survey was designed to effectively assess the value that physical therapists and their employers believe the physical therapists bring to the hospital team. An extensive literature review as well as consultation with a physical therapist in the field were performed to gather information about what questions should be asked.

To contextualize responses, the research team elected to collect general demographic information about the participants, such as age, years worked as an acute care physical therapist, the hospital(s) they currently work at, if they have a wound care certification, and if they are a part of a designated wound care team. Based on brainstorming with physical therapists practicing in the hospital and a literature review, five areas of acute care physical therapist value in the hospital were chosen to investigate. The therapists that helped develop the questions were excluded from participating in the survey. The five areas were 1) how therapists' value is assessed, 2) how their relationship with their employer affects their perceived value, 3) what aspects of their daily routine they found the most valuable, 4) how they felt they can best increase their value, and 5) in what ways participating in wound care affects their value.

Utilizing the information elicited from the literature review and experience of the consulting physical therapists, specific questions were created for each of the five general areas of value. Once the specific questions were developed, the researchers developed a stem question for each section to organize the survey. Each stem began with an incomplete base sentence or stem that signified a section of the survey. The

stems were each directed at one of the five areas of value the survey was designed to assess. The questions were then reworded to complete the stems, allowing the participants to rate each statement on a six-point Likert scale ranging from strongly disagree to strongly agree. The survey was entered into an online survey platform (Qualtrics) where the Anonymous Responses setting was activated to ensure IP addresses were not collected.

Participants & Recruitment

A list of hospitals in southern Nevada was used to develop recruitment strategies per hospital and to track what hospitals had included responses to the survey.
A recruitment flyer was distributed via emails to current students on clinical rotations, faculty of the University of Nevada Las Vegas Physical Therapy (UNLVPT) program, alumni of the UNLVPT program, and on social media. The flyer included the purpose of the study, the inclusion criteria, the procedure, the benefits of participation, the survey link, and contact information of the research team (Appendix 3).

The first group contacted were current UNLVPT students participating in clinical education. An email was sent to ask the students to share the recruitment flyer with their clinical instructors or other acute care physical therapists they knew. The next group contacted was the faculty of UNLVPT. They were encouraged to share the recruitment flyer with their colleagues. The recruitment flyer was then shared with alumni of the program via email. Finally, alumni of the UNLVPT program were emailed the recruitment flyer and asked to participate if they were eligible or to share the information with colleagues that fit the inclusion criteria. Acute care physical therapists who were

interested were asked to share the recruitment flyer with their coworkers, colleagues, and supervisors to participate as well. One month after the survey was opened, a second round of recruitment emails and flyers was sent. Part time instructors for the UNLVPT program were asked to participate in the survey if they fit the inclusion criteria for “physical therapist” and to relay the information to their colleagues that fit the inclusion criteria as well. The recruitment material was also posted on UNLVPT social media.

Participation

The recruitment information included a link to the online survey. This link took the participant directly to the survey where they first had to read the informed consent. If they proceeded, the first page of the survey asked them to select “Physical Therapist” or “Administrator.” For the purpose of this study “Administrator” referred to a physical therapy supervisor. From there the participant was directed to the appropriate survey. To ensure the participant fit the eligibility criteria, they next filled out demographic questions. After completing the demographic questions, if they were eligible, they were able to complete the survey and submit their responses. The survey was open for two months.

Analysis

After the survey was closed, the responses were evaluated to ensure there were no duplicate entries. Once verified, the responses were downloaded for analysis without participants’ names or identifying information. The responses were then screened

based on their demographic information to ensure that they met all the inclusion criteria. All respondents that did not meet all the criteria or did not consent to their data being used for the research project were removed from the data set.

The first section of the survey that was analyzed was demographic information. This information was assessed to better understand the population that responded to the survey. The average number of hours worked, years of experience overall and in the acute setting, and caseload of all the respondents were found. The demographic questions were then grouped to evaluate the characteristics of the therapists surveyed and allow the survey data to be analyzed based on years of experience in acute care and caseload.

Questions from each stem were then analyzed to report therapists' and supervisors' opinion on each question within that stem's group. To quantify the degree in which the respondents agreed or disagreed with each question, each Likert option was converted to a numeric value (strongly disagree = 1, disagree = 2, slightly disagree = 3, slightly agree = 4, agree = 5, strongly agree = 6). Once the responses were converted, the average score for each question was calculated. The average scores were used to compare the perceptions of value between the responses in each stem. The data was further analyzed to determine if years of experience or size of caseload played a factor in how the physical therapists responded. The researchers compared the average scores of therapists based on years of experience, size of caseload, hours worked, and if they had advanced certifications. The responses of the physical therapists were compared to the responses of the supervisors. The two stems that assessed how physical therapists can add value and how value is measured, had two

parts to their stems (for example “Stem 1” and “Stem 1a”). The first part of the stem included statements to assess what the physical therapist or supervisors feels brings the most value and the second part of the stem (“Stem 1a”) assessed the participants’ perspective on what is currently occurring in their hospital. This allowed the researchers to compare how the physical therapist’s perception of value coincided with their perception of what is actually occurring in the hospital they work.

RESULTS

Demographic Info:

Forty participants responded to the survey. Of the 40 responses, 37 were physical therapists and 3 were supervisors. Of the physical therapist responses, 12 were excluded due to not meeting all of the inclusion criteria such as working at a hospital in an area other than southern Nevada, not meeting the required number of hours worked in acute care, or not providing consent for their information to be used. One supervisor's response was excluded due to not providing consent for their information to be used. The demographic information of the participants is included below (*Table 1, Table 2*).

Table 1. Demographic information of physical therapist survey participants.

Hospitals Represented	
Total	9
Hours Worked	
<40 hours	5
>/= 40 hours	20
Years of Experience in Acute	
</= 1 year	4
>1-5 years	8
>5-10 years	3
> 10 years - 20 years	10
>20 years	0
Caseload	
0-10	1

>10-20	0
>20-30	2
>30-40	11
>40-50	8
>50	3
Certifications	
None	20
Wound Care	4
Anything Other than Wound Care	1
Residency/Fellowship	
Yes	1
No	24
Specific Wound Care Team in their Hospital	
Yes	25
No	0
PTs on Wound Care Team in their Hospital	
Yes	20
No	5
Participate on Wound Care Team	
Yes	11
No	14

Table 2. Demographic information of supervisor survey respondents.

	Supervisor 1	Supervisor 2
Years Worked in Current Job Title	1	2
Years Worked in Healthcare Administration	4	9
Clinical Background	PT	SLP
Number of Employees Supervised	56	21
Average PT Caseload Per Week	910-1,050 sessions	700 sessions

Stem 1

Stem one asked the participants to indicate their perception of the ideal methods for measuring value. Of the available options, participants reported that they agreed that hospital length of stay was the most appropriate measurement of the value a physical therapist brings to the hospital. The second response that physical therapists most agreed would accurately measure the value they bring was patient satisfaction followed by patient 30-day readmission rate. The option that the physical therapists found the least beneficial for measuring their value was patient performance-based outcome measures.

The supervisors most strongly agreed with patient reported outcome measures and patient 30-day readmission rates as effective ways to measure physical therapist value in the hospital. The supervisors disagreed most with using patient performance-based outcome measures and ability to see every patient on census to determine a physical therapist's value.

Physical therapists and supervisors both agreed that patient 30-day readmission rates are an ideal indicator of a physical therapist's value in acute care. Both groups did not rate seeing every patient on census and patient performance-based outcome measures as useful means of assessing value as the other options.

Table 3. Average responses from physical therapists and supervisors for Stem 1 rating the ideal measurement of physical therapists' value. Likert scale ranged from 1 (strongly disagree) to 6 (strongly agree).

Question	PT Average
STEM 1: Ideal Measurement of Value	
1. Patient reported measures	4.2
2. Performance- based measures	3.88
3. Patient hospital length of stay	5.28
4. Patient 30-day readmission	4.64
5. Patient satisfaction	5.24
6. Billable units	4.04
7. Number of patients seen	4.52
8. See every patient on census	4.08
9. Care coordination activities	4.88

Question	Supv Average
STEM 1: Ideal Measurement of Value	
1. Patient reported measures	5
2. Performance- based measures	3
3. Patient hospital length of stay	4.5
4. Patient 30-day readmission	5
5. Patient satisfaction	4
6. Billable units	3.5
7. Number of patients seen	4.5
8. See every patient on census	3
9. Care coordination activities	4.5

Stem 1a

Stem 1a asked the participants to rate to what degree their value is currently determined by each potential measurement. The physical therapists reported that they believe their value is currently measured most by billable units. The next two highest reported perceived measurements of value were number of patients seen and patient satisfaction. Physical therapists felt their value was not being measured by patient performance-based outcome measures as much as the other options.

The supervisors reported that among available options in the survey, they are currently determining their therapist's value most by billable units and number of patients seen. They disagreed that they are utilizing patient reported outcome or patient performance-based outcome measures to determine physical therapist value.

Table 4. Average responses from physical therapists and supervisors for Stem 1a evaluating the current measurement of physical therapists' value. Likert scale ranged from 1 (strongly disagree) to 6 (strongly agree).

Question	PT Average
STEM 1a: Current Measurement of Value	
1. Patient reported measures	2.3
2. Performance- based measures	2.17
3. Patient hospital length of stay	3.3
4. Patient 30-day readmission	2.87
5. Patient satisfaction	4.3
6. Billable units	5.61
7. Number of patients seen	5.3
8. See every patient on census	4.04
9. Care coordination activities	4

Question	Supv Average
STEM 1a: Current Measurement of Value	
1. Patient reported measures	1.5
2. Performance- based measures	1.5
3. Patient hospital length of stay	4.5
4. Patient 30-day readmission	4
5. Patient satisfaction	3
6. Billable units	5.5
7. Number of patients seen	5.5
8. See every patient on census	4
9. Care coordination activities	3.5

Stem 1 and 1a Comparison

Stem 1 investigated how physical therapists and their supervisors perceived their value should be measured whereas Stem 1a assessed how physical therapists and their supervisors perceived their value is currently being measured. In comparing the responses of these two stems it was found that overall physical therapists strongly agreed that patient length of stay is a valuable measure of their value but disagreed that they are currently being measured using patient length of stay. Physical therapists also agreed that 30-day readmission was a valuable way to measure their value but disagreed that their value is currently being measured using this method. Supervisors, however, agreed that 30-day readmission was a useful way to measure physical therapist value. Billable units were not rated highly by either group as a useful way to

evaluate a physical therapist's value in the hospital, but both groups agreed that this method is one of the most commonly used in assessing physical therapists' value out of the options provided in the survey. Both groups disagreed that patient performance-based outcome measures are utilized to assess the physical therapist's value, and both groups disagreed that this method is currently being used to assess physical therapists' value in acute care.

Stem 2

Stem 2 evaluated the relationship between the supervisor and the physical therapist. Overall, the physical therapists agreed with all questions posed in this stem. Physical therapists most strongly agreed that their supervisors understand their role in the hospital and allow for independent decision making. Therapists also agreed that their supervisors value their role, are approachable, and encourage their involvement in discharge planning. The supervisors also believe they understand the role of the physical therapist and feel they are approachable.

Table 5. Average responses from physical therapists and supervisors for Stem 2 rating the physical therapist and supervisor relationship. Likert scale ranged from 1 (strongly disagree) to 6 (strongly agree).

Question	PT Average
STEM 2: I believe my department supervisor	
1. Values my role	5.32
2. Understands my role	5.36
3. Is approachable	5.24
4. Allows independent decision making	5.44

Question	Supv Average
STEM 2: I believe I	
1. Value the role of the PT	5.5
2. Understand the role of the PT	6
3. Am approachable	6
4. Allow independent decision making	5.5

5. Encourages my involvement in discharge	5.32

5. Encourages PT's involvement in discharge	5.5

Stem 3

Stem 3 asked the participants, to which areas of the field do they feel they bring the most value. The participants agreed they felt the most value when educating patients and working with patients who have functional limitations. The participants agreed they felt the least value when working with patients with wounds, working with patients in the ICU, and providing detailed documentation.

The supervisors felt physical therapists bring value when working with patients post-operatively, working with patients in the ICU, working with patients with wounds, working with patients with neurological conditions, working with patients with functional limitations, and educating patients. The supervisors felt physical therapists bring the least value when providing detailed documentation.

Both therapists and supervisors agreed that therapists bring the most value when educating patients and working with patients with functional limitations. They also agreed that therapists bring the least value when providing detailed documentation. The therapists and supervisors disagreed when discussing working with patients with wounds and working with patients in the ICU.

Table 6. Average responses from physical therapists and supervisors for Stem 3 evaluating which aspects of the profession bring the most value. Likert scale ranged from 1 (strongly disagree) to 6 (strongly agree).

Question	PT Average
STEM 3: I feel like I bring the most value as a physical therapist when I am	
1. Working with patients post-operatively	5.38
2. Working with patients in the ICU	5.25
3. Working with patients with wounds	4.61
4. Working with patients with neurological conditions	5.46
5. Working with patients with orthopedic conditions	5.46
6. Working with patients with functional limitations	5.54
7. Working with patients with cardiopulmonary conditions	5.48
8. Collaborating with other healthcare professionals	5.29
9. Educating patients	5.63
10. Creating discharge plans	5.42
11. Creating an individualized plan of care	5.38
12. Decreasing fall risk	5.42
13. Providing detailed documentation	5.2

Question	Supv Average
STEM 3: I feel that physical therapists are most valuable when they are	
1. Working with patients post-operatively	6
2. Working with patients in the ICU	6
3. Working with patients with wounds	6
4. Working with patients with neurological conditions	6
5. Working with patients with orthopedic conditions	5.5
6. Working with patients with functional limitations	6
7. Working with patients with cardiopulmonary conditions	5.5
8. Collaborating with other healthcare professionals	5.5
9. Educating patients	6
10. Creating discharge plans	5.5
11. Creating an individualized plan of care	5.5
12. Decreasing fall risk	5.5
13. Providing detailed documentation	4

Stem 3a

Stem 3a asked the participants in what fields do they spend their time as an acute care therapist. The therapists reported they spent the most time educating patients and working with patients with functional limitations. The therapists reported

that they spent the least amount of time working with patients with wounds, working with patients in the ICU, working with patients with neurological conditions, and cardiopulmonary conditions. As this question is about the amount of time spent in a day by physical therapists, this question was not presented to the supervisors.

Table 7. Average responses from physical therapists for Stem 3a evaluating which aspects of the profession the physical therapists perceive they participate in most frequently. Likert scale ranged from 1 (strongly disagree) to 6 (strongly agree).

Question	PT Average
STEM 3a: As a physical therapist working in the acute care setting, I spend my time	
1. Working with patients post-operatively	5.35
2. Working with patients in the ICU	4.91
3. Working with patients with wounds	4.04
4. Working with patients with neurological conditions	5.04
5. Working with patients with orthopedic conditions	5.22
6. Working with patients with functional limitations	5.65
7. Working with patients with cardiopulmonary conditions	5
8. Collaborating with other healthcare professionals	5.39
9. Educating patients	5.74
10. Creating discharge plans	5.3
11. Creating an individualized plan of care	5.43
12. Decreasing fall risk	5.13
13. Providing detailed documentation	5.39

Stem 3 and 3a Comparison

Stem 3 looked at the areas physical therapists feel they bring the most value, whereas Stem 3a looked at the areas physical therapists spend most of their time. By comparing these two stems, it was found that physical therapists feel the most value and spend their most time educating patients and working with patients with functional limitations. There is no comparison to be made regarding Stem 3 and Stem 3a for the supervisors.

Stem 4

Stem 4 asked participants how they believe a physical therapist can increase their value. Both therapists and their supervisors strongly agree that being a role model for other physical therapists can increase their value. Supervisors also strongly agree that mentoring new graduates can increase a physical therapist's value. Therapists disagree most with the belief that being an American Physical Therapy Association (APTA) member can increase their value, while supervisors disagree most with the belief that working in other departments can increase a therapists' value.

Table 8. Average responses from physical therapists and their supervisors for Stem 4 evaluating how physical therapist value can be increased. Likert scale ranged from 1 (strongly disagree) to 6 (strongly agree).

Question	PT Average
STEM 4: I believe I could increase my value by	
1. Obtaining certification (wound care, geriatrics, etc.)	4.5

Question	Supv Average
STEM 4: I believe that physical therapists can increase their value by:	
1. Obtaining certification (wound care, geriatrics, etc.)	5.5

2. Completing a residency or fellowship	3.78	2. Completing a residency or fellowship	4
3. Participating in continuing education	4.87	3. Participating in continuing education	5.5
4. Becoming a clinical instructor	5.09	4. Becoming a clinical instructor	5.5
5. Mentoring new graduates	5.17	5. Mentoring new graduates	6
6. Being a role model for other physical therapists	5.3	6. Being a role model for other physical therapists	6
7. Working in leadership roles	4.83	7. Working in leadership roles	4.5
8. Working in other departments	4	8. Working in other departments	3.5
9. Working at different days/ times	3.96	9. Working at different days/ times	5.5
10. Being an APTA member	3.57	10. Being an APTA member	4.5
11. Holding a position/becoming involved in a national/state org	3.61	11. Holding a position/becoming involved in a national/state org	4
12. Publishing research/ presenting at a conference	3.96	12. Publishing research/ presenting at a conference	4.5

Stem 5

Stem five asked participants to indicate their belief in how the value of wound care provided in the hospital is maximized. Of the available options, physical therapists reported they agreed that having a designated wound care team was the most appropriate way to maximize the value of wound care in the hospital. The second response that physical therapists most agreed would maximize the value of wound care in the hospital was to have a wound care team with physical therapists on the team followed by having a wound care team with members who receive additional formal training beyond an entry level degree. The items that the physical therapists least agreed would maximize the value of wound care in the hospital were having health professionals other than physical therapists perform wound care followed by having

every physical therapist responsible for wound care rather than having a designated wound care team.

The supervisors most strongly agreed with having a designated wound care team, having physical therapists on the wound care team, and having members of the wound care team receive additional formal training beyond an entry level degree to maximize the value of wound care in the hospital. The supervisors disagree most with having wound care performed by health professionals other than physical therapists and having every physical therapist responsible for wound care rather than having a designated wound care team as ways to maximize the value of wound care in the hospital.

Physical therapists and supervisors both agreed that having mentorship avenues for physical therapists that want to pursue a certification in wound care and having a lead physical therapist certified in wound care are ways to maximize the value of wound care in the hospital.

Table 9. Average responses from physical therapists and their supervisors for Stem 5 evaluating the value of physical therapist involvement in wound care. Likert scale ranged from 1 (strongly disagree) to 6 (strongly agree).

Question	PT Average
STEM 5: I believe that the value of wound care provided in the hospital is maximized when:	
1. There is a designated wound care team	5.52
2. There are physical therapists on the wound care team	5.3
3. The lead physical therapist is certified in wound care	4.78

Question	Supv Average
STEM 5: I believe that the value of wound care provided in the hospital is maximized when:	
1. There is a designated wound care team	6
2. There are physical therapists on the wound care team	6
3. The lead physical therapist is certified in wound care	4

4. Every physical therapist is responsible for wound care rather than having a designated wound care team.	2.87
5. It is performed by health professionals other than physical therapists	2.83
6. There are mentorship avenues for physical therapists that want to pursue a certification in wound care	5
7. Members of the wound care team receive additional formal training beyond an entry level degree	5.22

4. Every physical therapist is responsible for wound care rather than having a designated wound care team.	2.5
5. It is performed by health professionals other than physical therapists	2
6. There are mentorship avenues for physical therapists that want to pursue a certification in wound care	5.5
7. Members of the wound care team receive additional formal training beyond an entry level degree	6

DISCUSSION

In this study we sought to measure the perspectives of the physical therapists and their supervisors to understand what value these two groups believe physical therapists bring to the hospital. Our findings support the idea that physical therapists feel they bring value to the hospital. The results of the survey also revealed that supervisors and physical therapists answered the survey questions very similarly, indicating that supervisors agree that physical therapists bring value to the hospital setting. The survey results also offered insight into different aspects of a physical therapist's value in the hospital, specifically how value is measured, what job responsibilities offer value, how to increase value, and if wound care adds additional value to the setting.

Measuring Value

Section one of the survey asked the physical therapists and supervisors to rate different options for measuring value. Physical therapists indicated that they believe hospital length of stay is an effective measurement of their value. On average, this measurement was rated as “slightly agree” by the supervisors. The literature supports that decreasing length of stay has been shown to lower hospital costs and decrease adverse events (Hoogervorst-Schilp et al., 2015). The evidence also suggests that physical therapists can play a role in helping to decrease length of stay (LOS) for patients by promoting and facilitating early mobilization (Curry et al., 2018; Tsurakidis et al., 2020; Johnson et al., 2017; Dewitt et al., 2019). Though most of the available evidence supports the use of physical therapy in the hospital to decrease LOS for

patients after total joint replacements or in the ICU, the therapists and supervisors rated length of stay as a good measure of value, supporting its use more generally in the hospital setting. One study did look more generally at length of stay by focusing on any older adult admitted to the hospital rather than patients in specific units or with specific diagnoses. The researchers found that older adults that were evaluated by physical therapy earlier tended to have a shorter length of stay and required less care upon discharge, which aligns with the perspective of the respondents of the survey (Hartley et al., 2019). Though the evidence supports that decreasing length of stay can be one avenue for hospitals to save money, Carey writes about the importance of balancing the potential cost savings of decreasing length of stay with readmission risk (Carey, 2015).

Therapists and supervisors agreed that 30-day readmission was an effective measurement of physical therapists' contributions to the hospital setting. There are currently financial incentives to lower readmissions due to the Center for Medicare & Medicaid Services (CMS) Hospital Readmissions Reduction Program (HRRP). With this program, hospitals are reimbursed less if patients are readmitted within 30 days after their discharge (CMS, 2021). By lowering readmission rates, hospitals can improve their overall earnings. The literature supports the idea that physical therapists can help to lower readmission rates, which is also in agreement with the survey responses. Studies have demonstrated that therapists are able to reduce readmission rates by decreasing functional decline and participating in discharge planning with the interdisciplinary team (Falvey et al., 2016; Kadivar et al., 2016; Kim et al., 2015). This would suggest that physical therapists can offer valuable insight into safe and appropriate discharge plans, decreasing the need for readmission.

The survey indicated that therapists and supervisors believe length of stay and readmission rates are valuable measurements of value, and the literature supports these beliefs; however, the physical therapists reported that they felt these measurements are not being used to measure their value (*see Stem 1a*). Both measures have been deemed valuable by the literature and the therapists and supervisors that work in the hospital. By utilizing these outcomes as a form of measurement of physical therapy, the hospitals would be able to better assess the therapist's value and ensure cost effective allocation of funds and resources. For this to be effective, more detailed research into dosage of physical therapy is necessary to make concrete recommendations. For example, retrospective studies that investigate what specific amount of physical therapy and what interventions correlate with shorter length of stays and decreased rates of readmission would be valuable in creating a specific dosage of physical therapy that adds value and ultimately lowers costs.

Another interesting result of the survey was the lack of value both physical therapists and supervisors placed on billable units and their ability to measure a physical therapist's value in the hospital. Despite finding little value in billable units, physical therapists indicated that they perceived this unit of measurement was frequently used to assess their value in the hospital. One reason for the frequent use of billable units could be the value of having an objective measurement of how many patients are seen and how many services are provided. This information is also valuable for research and to be able to assess dosages of physical therapy that improve outcomes and ultimately overall value. Though there is the potential for value in using billable units as a measure of physical therapists' contribution to the hospital, there

needs to be more research into how much and what kinds of therapy offer the most benefit and value. This way therapists can be effectively evaluated using units that have demonstrated value and improved outcomes.

Where Value is Added

Section three of the survey asked the physical therapists and supervisors where they felt physical therapists brought the most value in the acute hospital setting. This section focused on the physical therapists, not the supervisors, as the questions would not be relevant to the supervisors. The survey evaluated where physical therapists spend most of their time in the acute hospital setting. The physical therapists agreed they found the most value and spent the most time educating patients and working with patients who have functional limitations. Although patient education and functional mobility work in physical therapy has been frequently studied (Chase, Elkins, J., Readinger, J., & Shepard, K. 1993; Dumas, Haley, S. M., Carey, T. M., & Ni, P. S. 2004; Gahimer, & Domholdt, E. 1996; Sluijs 1991; Garcia, Dias, J. M. D., Dias, R. C., Santos, P., & Zampa, C. C. 2011), the value of these functions performed by physical therapists has not. Therapists also agreed they spent the least amount of time and felt the least valued when working with wounds and working with patients in the ICU. One article by Moore K. D., Hardin A., VanHoose L., & Huang H.H, found similar findings about physical therapists in wound care. This paper completed a Qualtrics survey about physical therapist's opinions on wound care. They found that only 18.3% of physical therapists in Texas directly practiced wound care and only 41.3% reported that physical therapists in their facility practiced wound care (Moore et. al, 2021). Kayambu, Boots, &

Paratz found that physical therapy in the ICU improved quality of life, overall function, and decreased length of stay; however, they did not touch on the value physical therapists felt while working with this population.

Both therapists and supervisors agreed therapists add value doing most things except creating detailed documentation. One paper disagreed, stating that detailed documentation about a patient's functional mobility levels could reduce future hospital readmission rates and can increase interdisciplinary communication (Falvey et. al, 2016). Other than documentation, the supervisor's consensus was that all areas mentioned in the survey completed by physical therapists were valuable in the acute hospital setting in their eyes.

Increasing Value

One section of the survey that demonstrated overwhelming agreement from both therapists and supervisors was the group of questions that asked about the relationship between therapists and their supervisors. Both groups agreed that supervisors value and understand the role of physical therapists in the hospital, are approachable, and allow for independent decision making. These responses suggest that physical therapists feel supported and respected by their supervisors. Fostering a strong relationship between the therapist and their supervisor has been documented as an important factor in increasing productivity and ultimately increasing value. Employees are typically more productive when they feel supported by their superiors (Zhou et al., 2016). In research looking specifically at healthcare professionals, employees that felt supported by their supervisors performed better and had less work stress (Park et al.,

2004). Healthcare workers were also found to trust and feel more support from their supervisors when they had more leadership-member exchanges and the supervisor took the time to talk with them directly (Chen et al., 2008). Knowing that positive interactions between the supervisor and employees can increase productivity, cultivating this relationship likely helps to increase the productivity and therefore the value physical therapists are bringing to the hospital setting.

The findings of this study indicate that physical therapists and their supervisors agree that being a role model for other physical therapists and mentoring new graduates are effective ways physical therapists can increase their value. This finding coincides with the literature as various studies have emphasized the importance of mentorship in clinical settings. According to a study by Black and colleagues, having role models and mentors in the clinical environment helps facilitate an easier transition into a therapist role for novice clinicians (2010). In addition, it was found that a lack of mentoring can lead to limitations in learning and development or even more drastic consequences such as one choosing to end their employment (Black et al., 2010). Becoming a clinical instructor was also one of the most agreed upon options among physical therapists when asked how one can increase value. Studies have shown that when a clinician serves as an instructor to a student, there are benefits for both the instructor and department such as increased awareness of current research, improved performance from the clinical instructor, and improved patient care (Marincic & Francfort, 2002).

Another interesting finding from this study was that physical therapists disagree most with the belief that being an APTA member can increase their value. As of 2017,

only 38.9% of licensed physical therapists in Nevada are APTA members (Cooklin et al., 2020). Several studies have identified reasons for non-membership, with some of the most common reasons being high cost of membership dues, inadequate member services, and the belief that the benefits do not outweigh the cost (Adebo-Adelaja et al., 2019, McGinty et al., 2001).

Value of Wound Care

Based on estimates originating from independent sources, the magnitude of wounds as a health care problem is sharply rising. Resources allocated to the education, care, and research of wounds continue to be disproportionately low and deserve strategic attention (Sen, 2019). One way to address this problem is to include the use of physical therapists in the management of wounds in acute care hospitals. Trained physical therapists may employ numerous treatment regimens, such as wound debridement, modalities, edema management, positioning, orthotic use, and mobility improvement. (Sen, 2019) The findings of this study agree that physical therapists should be part of the management of wounds. While the results indicated that physical therapists and supervisors agree that their involvement should be as part of a wound care team, physical therapists with greater years of experience tend to agree that it should be an individual responsibility.

Limitations

A strength of this study is the inclusion of physical therapists and supervisors in both for-profit and not-for-profit health care systems in Southern Nevada. This study

also included physical therapists and supervisors with varying levels of acute care experience. Not all physical therapists working with patients in acute hospitals in Southern Nevada elected to take the survey and only two supervisors participated in the survey. This small sample size introduces a potential for selection bias. In addition, not all Southern Nevada hospitals were represented in the sample and the participants all worked in hospitals with a dedicated wound care team. Also, this study does not seek to evaluate measurements of value in terms of implementation or patient outcomes, but rather seeks to provide an initial assessment regarding future implementation of methods for evaluating physical therapists in acute care hospitals. Because this study surveyed physical therapists in one region in one US state, these results may not be generalizable to physical therapists in other types of settings or regions. Future work should examine measurements of value and their efficacy on patient outcomes in larger national samples in a variety of regions.

CONCLUSION

In this study, the survey indicated that physical therapists and their supervisors both find value in physical therapists working in acute hospitals. The results also indicate that physical therapists and their supervisors often agree on where value is added, how value should be assessed, and how value can be added. Physical therapists found the most value in educating patients and assisting with functional limitations. Both therapists and supervisors felt that value was best assessed through length of stay and readmission rates and did not see as much value in assessment using billable units. The survey revealed that both groups felt that physical therapists could add the most value by being a role model for or mentoring new therapists. The results of this survey offer insight into specific areas of physical therapy in acute hospitals that physical therapists and their supervisors find valuable. Hopefully this knowledge can help guide the utilization of physical therapy services in the hospital and direct further research to remedy discrepancies and gaps in the research regarding physical therapy value in acute hospitals.

APPENDIX

Appendix 1: Survey for Physical Therapists

Demographic Questions

At which hospital are you currently working? (If you work at multiple hospitals, add the hospital you work in the most)

How many hours do you work per week at the above hospital?

How many years have you worked as a physical therapist?

How many years have you worked in the acute care setting?

What is your average number of patients seen per week at the above hospital?

Do you have a wound care certification or any other specialty certification?

yes	no

If yes, what certification(s) do you have?

Did you complete a fellowship or residency program?

yes	no

If yes, what fellowship/residency program did you complete?

Does the hospital have a designated wound care team?

yes	no

Are there physical therapists on the wound care team?

yes	no

Are you a part of the designated wound care team?

yes	no

Evaluation Methods

Stem 1: I believe that the value I bring to the hospital would be accurately measured by:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Patient reported measures (e.g., FAB-Q, LEFS)						
Performance-based measures (e.g., TUG, 6-minute walk test)						
Patient hospital length of stay						
Patient 30-day readmission						
Patient satisfaction						
Billable units						
Number of patients seen						
My ability to see every patient in my census for their full POC						
Participation in care coordination						

activities						

Stem 1a: My performance is currently measured based on:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Patient reported measures (e.g., FAB-Q, LEFS)						
Performance-based measures (e.g., TUG, 6-minute walk test)						
Patient hospital length of stay						
Patient 30-day readmission						
Patient satisfaction						
Billable units						
Number of patients seen						
My ability to see every patient in my census for their full POC						
Participation in care coordination activities						

Stem 2: I believe my department supervisor:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Values the role I play as a physical						

therapist						
Understands my responsibilities/ the role I play as a physical therapist						
Is approachable to discuss my performance						
Allows me to make independent decisions about the plan of care						
Encourages me to be involved in decisions about discharge						

Stem 3: I feel like I bring the most value as a physical therapist when I am:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Working with patients post-operatively						
Working with patients in an ICU						
Working with patients with wounds						
Working with patients with neurological conditions						
Working with patients with orthopedic						

conditions						
Working with patients with functional limitations						
Working with patients with cardiopulmonary conditions						
Collaborating with other healthcare professionals						
Educating patients						
Creating discharge plans						
Creating an individualized plan of care						
Decreasing fall risk						
Providing detailed documentation						

Stem 3a: As a physical therapist working in the acute care setting, I spend my time:						
	Never	Very Rarely	Rarely	Occasionally	Frequently	Very Frequently
Working with patients post-operatively						
Working with patients in an ICU						
Working with patients with wounds						
Working with patients with						

neurological conditions						
Working with patients with orthopedic conditions						
Working with patients with functional limitations						
Working with patients with cardiopulmonary conditions						
Collaborating with other healthcare professionals						
Educating patients						
Creating discharge plans						
Creating an individualized plan of care						
Decreasing fall risk						
Providing detailed documentation						

Stem 4: I believe I could increase my value by:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Obtaining certification (wound care, geriatrics, etc.)						

Completing a residency or fellowship						
Participating in continuing education						
Becoming a clinical instructor						
Mentoring new graduates						
Being a role model for other physical therapists						
Working in leadership roles						
Working in other departments						
Working at different days/ times						
Being an APTA member						
Holding a position/ becoming involved in a national/ state organization						
Publishing research/ presenting at a conference						

Stem 5: I believe that the value of wound care provided in the hospital is maximized when:						
	Strongly	Disagree	Slightly	Slightly	Agree	Strongly

	Disagree		Disagree	Agree		Agree
There is a designated wound care team						
There are physical therapists on the wound care team						
The lead physical therapist is certified in wound care						
Every physical therapist is responsible for wound care rather than having a designated wound care team.						
It is performed by health professionals other than physical therapists						
There are mentorship avenues for physical therapists that want to pursue a certification in wound care						
Members of the wound care team receive additional formal training beyond an entry level degree						

Appendix 2: Survey for Supervisors

Demographic Questions

At what hospital do you currently work?

How many years have you worked in your current job title?

What is your title at your current job?

How many years have you worked in healthcare administration?

Do you have a designated wound care team at your hospital?

yes	no

Do you have a clinical background (such as a physical therapist, speech pathologist, occupational therapist, nurse, physician, etc.)

yes	no

If yes, what is your clinical background?

If no, what is your educational background?

How many physical therapists do you supervise?

What is the total average caseload per week of all the physical therapists you supervise? How many patients are seen by the physical therapy department per week?

Evaluation Methods

Stem 1: I believe that the value physical therapists bring to the hospital would be accurately measured by:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Patient reported measures (e.g., FAB-Q, LEFS)						
Performance-based measures (e.g., TUG, 6-minute walk test)						
Patient hospital length of stay						
Patient 30-day readmission						
Patient satisfaction						
Billable units						
Number of patients seen						
Participation in care coordination						

activities						

Stem 1a: I currently measure physical therapists' performance based on:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Patient reported measures						
Performance-based outcome measures						
Patient hospital length of stay						
Patient 30-day readmission						
Patient satisfaction						
Billable units						
Number of patients seen						
Participation in care coordination activities						

Stem 2: I believe that I:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Value the role physical therapists play						
Understand the responsibilities/ roles of a physical therapist						

Am approachable to discuss the performance of the physical therapists						
Encourage the physical therapists to make independent decisions about their plan of care						
Encourage the physical therapists to be involved in decisions about discharge						

Stem 3: I feel that physical therapists are most valuable when they are:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Working with patients post-operatively						
Working with patients in an ICU						
Working with patients with wounds						
Working with patients with neurological conditions						
Working with patients with orthopedic conditions						

Working with patients that have functional limitations						
Working with patients with cardiopulmonary conditions						
Collaborating with other healthcare professionals						
Educating patients						
Creating discharge plans						
Creating an individualized plan of care						
Decreasing fall risk						
Providing detailed documentation						

Stem 4: I believe that physical therapists can increase their value by:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
Obtaining a certificate (wound care, geriatrics, etc.)						
Completing a residency or fellowship						
Participating in continuing education						

Becoming a clinical instructor						
Mentoring new graduates						
Being a role model for other physical therapists						
Working in leadership roles						
Working in other departments						
Working at different days/ times						
Being a member of a national association						
Holding a position/ becoming involved in a national/ state organization						
Publishing research/ presenting at a conference						

Stem 5: I believe that the value of wound care provided in the hospital is maximized when:						
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree
A designated wound care team						
Physical therapists on the						

wound care team						
A lead physical therapist certified in wound care						
Every physical therapist is responsible for wound care rather than having a designated wound care team						
Health professionals other than physical therapists						
Avenues for mentorship for physical therapists that want to pursue certification in wound care						
Members of the team receive additional formal training beyond an entry level degree						

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Member of Academy of Orthopedic Physical Therapy	September 2020 - Present
Member of American Academy of Sports Physical Therapy	February 2020 - Present
Member of APTA, Member #865512	August 2019 - Present
Member of APTA Nevada State Chapter	August 2019 - Present

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Emergency Response for the Athlete	September 2020
American Heart Association, BLS for Healthcare Providers	May 2020
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