INTRODUCTION

Physical therapy treatment involves both the presenting physical symptoms and understanding the meaning the injury has for patients and how that meaning influences both the behavior of treatment providers and patients--specifically, how and why patients come for initial treatment and or continue to return for treatment. When individuals present for physical therapy for an injury resulting in a loss of function, a “holistic assessment” may not be considered. Human beings experience injuries holistically. This conceptualization of treatment considers human interactions through biological, emotional/psychological, cognitive, and behavioral paradigms. The biological approach suggests behavior has a physical and/or genetic base. Research supports the importance of biological factors in the development of physical injuries, genetic influences, and biochemical imbalances. A behavioral context of treatment suggests behavior is learned. For example the learned helplessness model of depression argues depression is a result of early conditioning (1). Researchers found when animals are placed in situations where they could not escape from electric shocks; they do not escape shocks in later situations when they could have. Instead, passivity and powerlessness develop; they have learned to be helpless. (2) found similar results in studies of humans who have been conditioned to be helpless in situations where they were exposed to aversive stimuli, i.e., uncontrollable shocks.

ABSTRACT

Those who lose function because of a traumatic injury, come to physical therapy for treatment, and after completing the necessary treatment and physical functioning is restored, they are discharged. If patients cycle back once, this may be an indication that more physical therapy is needed. However, if they continue to “cycle” back several times this may be a sign of a possible psychological manifestation of the traumatic injury. Physical therapy may have restored the patient back to healthy functioning. However, this may not be enough from a holistic perspective of a patient. Human nature is composed of both a physical constitution and a psychological framework. Likewise, trauma can have both physical symptoms, pain, decreased strength or a lack of mobility and functioning, and psychological presentations and exhibitions. This psychological manifestation includes how the patient conceptualizes the trauma, what meaning the patient gives to the injury and its limitations, and how it shapes patient behavior. It is this mental and emotional process, a kind of somatization effect that may cause the patient to sense physical pain and produce a limited range of motion post physical therapy treatment. Thus physical therapy alone may not be enough to treat the psychological framework, conceptualization and meaning of the trauma. This exploratory study used a mixed method approach to examine this cyclical behavior, possible psychological injury in a sample of randomly selected patients, who presented to physical therapy for treatment. The results suggest that a cyclical pattern presented in 33% of the participants has an emotional connection. These findings have implications for further research, practice, and for expanding the understanding that while physical therapy heals the body, physical therapists may need to network with and refer cyclical patients to licensed or certified psychosocial professionals for the treatment of the psychological injury influencing the trauma, for a holistic approach.

Key words: Emotional Intelligence, Chronic Pain, Psychotherapy.

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The Cyclical Patient in Physical Therapy: Addressing the Psychosocial Context for Holistic Treatment

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noise and cognitive tasks that are impossible to solve. Noting similarities in symptoms of depression to those displayed when individuals were conditioned to be helpless, Seligman (2) argues depression results from early experiences in which an individual was made to feel powerless (3). Physical therapy patients may likewise experience learned helplessness with regard to their injury. A state of learned helplessness may result in patients returning for further treatment even when the initial physical therapy treatment has returned them to healthy functioning. This model emphasizes the role of attributions or explanations people make to explain condition and behavior. As a result of that early conditioning, when individuals are exposed to situations, self-defined as “overwhelming”, the patient may feel a sense of helplessness and through his or her self-explanation may attribute the powerlessness to a lack of “personal” resources. The patient may view this situation as permanent, and see his or her powerlessness as extending to the injury. This produces a sense of hopelessness and depression (4). This concept of learned helplessness also suggests a cognitive processing of the patient’s thoughts and feelings about his or her injury, the level of pain and functioning, and the perception of how it affects his or her life, self-image and esteem.

A cognitive concept of a traumatic injury implies a visceral aspect of an injury that is influenced by maladaptive beliefs and faulty cognitive styles (5). Under this conceptualization, what happens to a patient, i.e. the diagnosis or the injury may not be as important as how the patient interprets and assigns meaning to the diagnosis/injury. Remembering attitude is the father of the action/behavior, it is not the injury itself; it is the attitude toward the diagnosis/injury that determines behavior. One’s attitude, mood or emotion is influenced by cognition, by individual thoughts. Thus, a learned helplessness paradigm of diagnosis/injury and healing must take into account the role of emotion, cognitions, and behavior. Beck’s (5) model of depression for example is more cognitive. He argues psychological disturbances are activated by automatic thoughts. These thoughts are so deeply entrenched the person is not aware of them, but can be activated by specific types of events. Automatic thoughts arise from dysfunctional attitudes, which are based on individual personal values or rules, which interfere with a patient’s return to function. These attitudes underlie why some individuals may be prone to depression and other disorders. In the same way, it may be these attitudes, their associated meaning, and ways of thinking and feeling that could be associated with the cyclical behavior of physical therapy patients. A cyclical pattern is found when a patient presents to a medical provider for several visits, days or months apart, for the same symptoms. Those who lose function because of an injury come to physical therapy for treatment, and after completing the necessary treatment, function is restored and they are discharged. If patients’ cycles back once, this may indicate a return for further physical therapy is necessary. However, if they continue to “cycle” back several times this may indicate a possible psychological effect. Physical therapy may have restored the patient back to function; however, this may not be enough from the holistic perspective. Human nature is composed of both a physical constitution and a psychological framework. Likewise, trauma can have both loss of function and psychological presentations. This psychological manifestation includes how the patient conceptualizes the diagnosis/injury, what meaning does the patient give to the diagnosis/injury, and how it shapes patient behavior. It is this mental and emotional process, a kind of somatization effect that causes the patient to have a return of symptoms. Thus, physical therapy alone is not enough to treat the psychological framework and meaning of the diagnosis/injury which has a strong influence on the biological/physical structure. If a trauma has been endured and a cyclical pattern of behavior is presented, the person may only truly heal through a multi-disciplinary treatment approach that takes emotions, thinking, and meaning into account for treatment. It is well documented that several cyclical signs of trauma may
Patient’s cyclical behaviors suggest a need for a holistic approach combining physical therapy and social work. Currently most “practitioners have been trained to focus on one primary area of the person: physical, psychological, social, spiritual, educational, and so forth” (8). A multidisciplinary approach in treatment that includes referral to a clinical social worker can provide the physical therapist with this necessary “holistic” approach to treating their cyclical patients.

MATERIALS AND METHODS

This study was presented to the owner of an outpatient physical therapy clinic in a mid-west city, with a population of approximately 200,000. A study proposal was drafted and presented to the Board of Directors. With their approval, a research proposal was submitted to the University IRB. The university IRB approved the exploratory study which began during the first quarter of 2012. It is hypothesized that medical symptoms have a visceral framework; that is it involves an emotional awareness and connection to one’s physical body and illness, injury/diagnosis. The reasons people enter, leave and/or return for medical treatment is likewise emotional. For the purposes of this study emotions were operationalized and measured using the Bar-On Emotional Quotient Inventory (EQ-i) (9). The BarOn EQ-i is composed of 133 questions, each using a 5-point self-rating Likert scale (1 = “Very Seldom or Not True of Me” to 5 = “Very often True of Me or True of Me”). The test measures 16 factorial components in five functional areas: Intrapersonal (emotional self-awareness, assertiveness, self-regard, self-actualization, independence); Interpersonal (empathy, interpersonal relationship, social responsibility); Adaptability (problem solving, flexibility, reality testing); Stress Management (stress tolerance, impulse control); and General Mood (optimism, happiness). The average acceptable range of scores for the BarOn EQ-i is 90-110. The BarOn EQ-i takes approximately 30-40 minutes to complete; there are no imposed time limits. The reading level of the Inventory in English has been assessed at the North American sixth grade level. It was developed to be suitable for individuals 16 years of age and older. In addition to the BarOn EQ-i a demographic questionnaire was developed and administered to identify variables that the literature review and research experience suggested might be variables connected to patient treatment recidivism. The questionnaire consisted of 24 questions covering age, race, gender, marital status, social economic status, education, and family of origin information. Medical questions included pain rating (0-10), pain/injury location, subjective description of the pain (stabbing, burning, aching), and etiology of the pain/injury as well as duration of the pain. A second, more qualitative and interviewer led questionnaire was administered at the conclusion of the study. This interview was for the purpose of gathering more subjective information about the patient’s expectations of treatment, end of study pain rating, self-rating of return to function, and any other subjective data the patient cared to report.

Participant selection criteria were based on clinic patients who met the criteria were randomly selected to be contacted. The researcher contacted each patient by telephone, discussed the study, and asked if they would like to participate. Those answering yes were asked to come into the clinic one hour prior to their scheduled physical therapy evaluation. During this hour the study was described in detail, their agreement to participate was confirmed, and written informed consent was read and signed. The Pre-Test (baseline) consisting of the BarOn EQ-i and the demographic questionnaire was administered. All the patients received their physical therapy evaluation and proceeded with their plan of...
care treatment. After the evaluation (2) of the five (5) participants were disqualified because they presented with other medical conditions; in one case the physician wanted further evaluation and the other patient presented with co-morbidities that would delay physical therapy. The three remaining participants were labeled T1, T2, and T3 for confidentiality. Patients were seen again for Post- test assessment prior to discharge between their 4th and 6th physical therapy treatments where the BarOn Eq-i was administered and the qualitative interview was conducted. The participant’s responses (raw data) was entered into the data collection sheet on the computer through the Multi-Health Systems (10), the publisher of the instrument, web site and scored. The final results were returned with input for interpretation of the findings. The qualitative interview was conducted one hour before their scheduled physical therapy evaluation. He or she was individually escorted to a private office located within the outpatient clinic. During this interview participants answered questions about their expectations of physical therapy, goals for return to function, their feeling about their illness, their coping ability, and then rated their recovery on a scale of 0-10 (0 being where they started and 10 being fully recovered). The participants reported their pain rating and were asked if the pain had changed or if it stopped them from participating in social events. They were asked if the pain was started by a particular accident, injury, or event, and when did the incident occur. Other questions included current pain level and pain medication being taken. They also were to rate their overall wellbeing, as well as provide how many people they had available as social support. Lastly, they reported if they suffered with headaches and were then given space to write if they had any comments.

The interview questions were followed by the posttest BarOn EQ-i, to measure how the physical therapy may have impacted their social and emotional wellbeing. Upon completion of the BarOn EQ-i posttest, the pretests and posttests were manually entered into the scoring web page of Multi-Health Systems Inc. (10), the results were available immediately following the selection of individual, pretest group and posttest group totals, as well as a comparison of pretest and posttest.

Data Analysis

The psychological framework of each patient was rationalized and measured using the Bar-On Emotional Quotient Inventory (EQ-i) (9). The BarOn EQ-i is composed of 133 questions, each using a 5-point self-rating Likert scale (1 = “Very Seldom or Not True of Me” to 5 = “Very often True of Me or True of Me”). The test measures 16 factorial components in five functional areas: Intrapersonal (emotional self-awareness, assertiveness, self-regard, self-actualization, independence); Interpersonal (empathy, interpersonal relationship, social responsibility); Adaptability (problem solving, flexibility, reality testing); Stress Management (stress tolerance, impulse control); and General Mood (optimism, happiness).

RESULTS

While the group score was within the average to acceptable range, (90-110), it was T3 that stood out. Her Total EQ-i score was 75. The validity of the results is supported. Positive =100, Negative = 105.7 (10). The results of the total group average scored were (93)” (10). The group scored on the lower average, with stress management rating 80 and general mood rating 85. Stress area impulse control was in the 75, and stress tolerance rated 91. The mood indicated that optimism was in the high average, rated at the 97. However, happiness was in the low average range of 78. Intrapersonal rating overall was on the high end of average, however, with the rating self-regard and self-actualization both rated low average at the 88. One participant’s self-assured, self-respect and healthy body image was rated low, while the two other participants self-rated that they seldom felt good about themselves. Participants rated self-actualization, or feeling that life is meaningful as under average, and they rated little or no interests that “make life meaningful,” or they did not “enjoy interests”. The participants included one male and two female. One participant had less than high school education and none had a college degree. The family income off all participants ranged from $30K
to $15K a year. The participants were asked what expectations they have of physical therapy and each responded they wanted pain relief, increase range of motion and to restore their prior mobility. Two participants rated well-being as good and one rated well-being as fair. All three participants met with their primary care physician prior to physical therapy, and one also was seen by a rheumatologist, a neurologist, a pain specialist, and a sleep specialist.

Validity Indicator of the BarOn EQ-i: “Several sections follow describe the validity indicators and summarize their meaning” (10). Inconsistency Index of the BarOn-EQ-i; “a high score on the Inconsistency index was obtained by 0% of the group. This result indicates that there is sufficient consistency in the responses, and supports the validity of the obtained results” (10). Positive Impression (PI) and Negative Impression (NI) Scores: obtained on the positive and negative impression scales indicate a fairly realistic group appraisal which is not overly positive or negative” (10).

Summary of Validity Scale Results of the BarOn EQ-i: “overall, the scores described in this section support the validity of the EQ-i scores provided in this report” (10). Total EQ was in the average range indication reasonably effective functioning” (10). However, looking at the individual performance of the pretest vs. posttest indicates that participant T1 and participant T2 both scored in the average range to above average in five of the six components, while participant T3 scored below average in five of the six components. Participants T1 and T2 had little to no change. However, participant T3 scored a 19 percent increase in the total BarOn EQ-i.

**DISCUSSION**

This research suggests participant T3 is identified as a patient who presents with cyclical behaviors. As indicated in Graph 1, T3 presented below the average acceptable range (90-110) of the BarOn-EQ-i in four of five measurement scales, with only the interpersonal scale (98/103) scoring within the average/acceptable range. The scales suggesting a sense of self, illustrate her emotional/psychological functioning was significantly impacted at the time she presented to physical therapy. While post-test scores suggest T3 showed some grown in emotional functioning, as exemplified in the remaining four scales. Her interpersonal scale remained unchanged at 68. This together with her general mood (57), stress management (85), and adaptability (86) scales, suggest that T3, though, able to improve in her external interactions, her sense of self remains below the average/acceptable range even after physical therapy. Without the treatment of the psychological framework she has not been holistically returned to function. The intrapersonal self is related to the “internal aspects of a person, especially emotions”, and the mood is a “state of mind” (11). The low scores on these scales supports a need for the holistic intervention of a physical therapist for the body, and the need for clinical social work to intervention to address the psychological framework of the diagnosis/ injury.

Empirical data and theories of development suggest a number of variables influencing human growth and development. Variables that influenced T3 are illustrated in Graph 2. Compared to the other two participants, T 3’s income level of $15,000 a year is below the poverty level of $20,000 (12). Bernstein notes that defined a family of four that has a yearly income of $20,000 or less, as living in poverty. He confirmed that a sense of depression, hopelessness, isolation and detachment is commonly felt by those in poverty [due to a lack of resource to have more advantageous economic choices/opportunities].

Erick Erickson’s Theory of Personality and Stages of Psychosocial Development support a self-concept and identity is developed through social interaction. A child (6-11 yrs) experiences the stage of Industry vs. Inferiority which a child can recognize major disparities in personal abilities relative to others. Adolescents (12-20 yrs.) go through the stage of Industry vs. Inferiority where he/she compares self-worth to others. Erickson notes a child can experience the death of a parent, her father, during her important early developmental years. She reported her father died before her 18th birthday. The literature suggests the death of a parent creates an overpowering stressor to the...
The results of the BarOn EQ-i between pretest to posttests indicate Participant T1 and Participant T2 both are at the average acceptable range than participant T3. However, T3 overall shows the most growth at post-test other participants.
Graph 3: BarOn EQ-i PRE TEST vs. POST TEST

Participant 3

<table>
<thead>
<tr>
<th></th>
<th>Pre Test</th>
<th>Post Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interpersonal</td>
<td>98</td>
<td>103</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>68</td>
<td>85</td>
</tr>
<tr>
<td>Stress Management</td>
<td>85</td>
<td>74</td>
</tr>
<tr>
<td>Adaptability</td>
<td>86</td>
<td>47</td>
</tr>
<tr>
<td>General Mood</td>
<td>57</td>
<td></td>
</tr>
</tbody>
</table>

Graph 4: Self-Reported Information

- Yearly income in thousands
- 2 parents in household while child 18 yo
- Death of a parent
- Previous medical providers

child (14), as well as anxiety, issues of trust, and uncertainty. For a child to lose a parent before 18 years old creates an intense sense of stress from the loss, and if his or her other caregiver-parent is grieving and unable to provide emotional/psychological support, the child could experience a magnified effect from the loss (14). Finally, the graph notes that of all participants, T3 had the most medical providers and the least social support. People are social beings and interact with the larger external society to meet their needs. T3 is lacking a strong personal support network and may reach out to medical providers to provide the necessary support. When overwhelming events occur they impact the sense of self and thus behavior. Symbolic Interaction Theory notes that humans are not born with a sense of self but develop self-concept through social interaction; and once developed it provides “an important motive for behavior.” (15). It is within human nature to reach out to others for comfort and reassurance, however when one does not have this support, stressors may be internalized and manifest themselves in physical symptoms that foster cyclical behavior.
Physical therapists must be adept and proficient in recognizing the cyclical patterns in their patients. In this regard the physical therapist must be able to distinguish between the physical symptoms and the patient’s perception as well as the psychological meaning of the diagnosis/injury. It is this psychological and subjective meaning that has significant influence on cyclical behavior and ultimately deems the plan of care completed or the patient’s return of symptoms and the need for further treatment. Thus, the physical therapist must develop a plan of care that treats the physical symptom but then considers a referral for an evaluation/assessment for treatment of the psychological framework in order to address the emotional root of cyclical behavior.

Current physical therapist and physical therapist assistant core curriculum does not appear to include or teach how to identify psychological characteristics. Equally incomplete is the lack of recognition of the importance of a patient’s psychological manifestation by the seeming lack of any post degree education or training to cognize and identify a patient who presents with a psychologically induced cyclical pattern behavior. A lack of cross disciplinary referrals is supported by Palmer (8) noting that, “practitioners have been trained to focus on one primary area of the person: physical, psychological, social, spiritual, educational, and so forth”. This study confirmed this deficit in curriculum and networking in a conversation between the researcher and the physical therapist who evaluated participant T3, who commented that, “I did not know physical therapists could refer a patient to social work” A. Struble (personal communication, May 2012). The physical therapist must develop a network of mental health providers in order to deliver effective treatment services that lead to a holistic outcome to decrease patient recidivism. A complete holistic treatment plan for a cyclical pattern of behavior would have the physical therapist treat the physical aspect of the diagnosis/injury and a clinical social worker treating the emotional/psychological context.

CONCLUSION
To maximize physical therapy treatment effectiveness it is importance for the therapist to recognize the cyclical pattern of patient behavior, understand the psychological nature of the diagnosis/injury, and partner with a clinical social worker to restore function holistically, mind, body, and spirit, to reduce patient recidivism.

CONFLICTS OF INTEREST
None identified and/or declared.

REFERENCES