

# Enhancing Patient Management Skills of Physical Therapy Interns: An Action Research

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## ABSTRACT

Every student success after graduation is an indicator that the vision, mission, goals of the university has been successfully achieved and that the graduate is professionally competent and is ready to be fully integrated to the real work situations. A higher academic institution that offers physical therapy program in Northern Mindanao is now faced with new and greater educational challenges because of an aggressive implementation of higher education reforms and how to meet with the expectations of the internal and external stakeholders. Thus, the university will take its way in this endeavor to meet the needs of the physical therapy profession and enhance the competency of its graduates. The purpose of this study was to determine the effect of intervention activities on the level of patient management skills among physical therapy interns. This study was anchored on the comprehensive outcomes-oriented model of patient management. Series of intervention activities were conceptualized using the action research cycle framework. It utilized a prospective research design within a period of 10 months among 20 physical therapy interns who were undergoing their clinical internship program. The data on patient management skills revealed that there is significant difference in the mean ratings of all variables on patient management skills before and after the intervention program, improving significantly the patient management skills of PT interns.

**Keywords:** Physical Therapy, Patient Management Skills, Clinical Internship Program, Action Research

## INTRODUCTION

Every student success after graduation is an indicator that the vision, mission, and goals of the University have been successfully achieved and that the graduates are professionally competent and are ready to be fully integrated to the real work situations. A higher education institution that offers physical therapy program in Northern Mindanao is committed to deliver quality education to her constituents through quality instruction, research, and community involvement cognizant of possible opportunities for global integration among its physical therapy graduates. This is exemplified by the results in the physical therapist licensure examinations in which the university garnered 4th place, 2nd place, and 10th place with a high passing rate of its new graduates. Despite these significant achievements, the University is now faced with new and greater educational challenges because of an aggressive implementation of higher education reforms especially for the physical therapy program to meet the expectations of the internal and external stakeholders. These educational reforms are dictated by changes in the national and global standards of physical therapy practice. Such reforms include change in the approach into outcomes-based education and to produce competent graduates who will meet industry expectations both locally and worldwide. Thus, the university will tread its way in this endeavor to meet the needs of the physical therapy profession and consistently enhance the competency of its graduates in terms of patient management skills which are essential components of physical therapy clinical practice.

The purpose of this study was to determine the effects of intervention activities on the level of patient management skills among physical therapy interns during their clinical internship. The intervention activities were intended to enhance the clinical skills of physical therapy interns which are of prime importance in attaining the standard competencies required of the physical therapy profession.

## ORGANIZATIONAL ANALYSIS

After a series of meetings, the researcher discussed these concerns to the vice-president for academic affairs (VPAA). The primary intention of the researcher was to improve the patient management skills of PT interns by aligning the academic teaching and clinical practice in physical therapy and develop strategies on how to make innovations in the PT curriculum, improve patient management skills, and enhance clinical reasoning, critical thinking skills, and evidence-based practice of students especially when formulating patient management.

In line with this purpose, the researcher visited the affiliated rehabilitation centers to conduct informal interviews with the PT interns to determine which particular aspect of the clinical internship program they find the most difficult for them to handle in terms of patient management. Most of the answers of interns were focused on their difficulty in clinical decision making during patient management.

To confirm these problems, the researcher conducted a pre-assessment. The Physical Therapist Clinical Performance Instrument for Students of the American Physical Therapy Association (APTA), Department of Physical Therapy Education (June 2006) was the tool used to assess the patient management skills of the PT interns during their clinical rotations.

The results of pre-assessment on patient management skills of physical therapy interns revealed that the overall mean was 2.27 (good). The data denote that interns must have to develop their skills in clinical reasoning especially having logical rationale and evidences from peer-reviewed published articles relevant to physical therapy as basis for making their clinical decisions. Furthermore, interns must improve their capability of making clinical decisions following the concept of disability (whole person) rather than the disease itself. The data also revealed that Interns have difficulty in screening their patients for patient management. This means that they have difficulty in utilizing data from patient history, systems review, and tests and measures to screen their patient prior to the conduct of actual physical therapy intervention.

Ratings of interns in conducting examination of the integumentary, neuromusculoskeletal, and cardiopulmonary systems and screening at community sites are only “good” since prior to the conduct of pre-assessment it is still their third month of clinical duty and many of them have not yet rotated to community-based rehabilitation center.

Some indicators on examination were rated “good” especially on their competence (accuracy, efficiency, and proficiency) in asking for patient history, performing tests and measures, and conducting tests and measures. Further, the data suggested that interns must have to improve their performance in conducting examination by observing necessary protocols such as selecting and sequencing evidence-based tests and measures and performing regular reexaminations to improve their patient condition.

It was noted on the pre-assessment results on evaluation that interns must have to develop their ability to use and synthesize the examination results in identifying and prioritizing impairments and functional disabilities in the problem list. There was also a need for interns to develop their skills in citing evidences to

support their clinical decisions such as accepting the patient for physical therapy intervention or referring the patient to other medical practitioners for further examination and intervention.

All indicators on diagnosis and prognosis were rated as “good” during pre-assessment. This means there was a need for interns to improve their ability in correlating the results of examination to their background knowledge about diseases, impairments, and disabilities in coming up with patient physical therapy diagnosis. Also, interns must have to improve their ability in integrating data from examination, research and literature, and contributing factors for them to determine prognostic indicators and arrive at an accurate prognosis of the patient.

The average mean of clinical performance of interns on plan of care was “good”. This implies that there is a need for them to develop their skills in formulating plan of care for their patients consistent with the results of examination and evaluation. Interns also have to make the goals and desired functional outcomes of patient management align with the expected time duration and resources needed in achieving the treatment goals.

Interns during their clinical rotation demonstrated very good performance on procedural interventions; however, clinical supervisors/instructors should continue to monitor the interns performing procedural interventions to ensure safety, effectiveness, and efficiency in doing the procedures on their patients. Interns also manifested good performance in educational intervention which deemed that it is necessary for them to improve their skills in giving patient education considering learning preferences, educational needs, and barriers to learning so that they will be able to modify their interactions with their patients.

Data also revealed that there was an immediate need for the interns to improve their skills in documentation especially in selecting relevant information to document following the SOAP format. Organization and selection of contents in documenting relevant information following guidelines and format required by the affiliation center must be developed among interns.

Noted on outcomes assessment was “good” clinical performance in all indicators. This is because the clinical practice of physical therapy in the local setting poorly recognized the importance of outcomes assessment as part of patient management. The researcher personally observed during his clinical visits that PT clinicians and interns seldom conduct assessment of goals interventions to determine the effectiveness of patient management. PT facilities seldom conduct assessment to know the level of patient and family satisfaction as regards delivery of physical therapy care.

The statistical results of pre-assessment on patient management skills of PT interns concurred with the observations of the researcher. The results served as the basis that there is a need to conduct an intervention in order to improve the patient management skills, clinical reasoning, critical thinking skills, and evidence-based practice skills of interns during their clinical internships.

## **THEORETICAL FRAMEWORK**

This study was anchored on the Comprehensive Outcomes-Oriented Model of Patient Management (COOMPM) developed by the American Physical Therapy Association (APTA) as indicated in their Guide to Physical Therapist Practice (Kisner & Colby, 2013) as basis in improving the patient management skills of physical therapy interns.

The global trends of physical therapy practice today is guided by the COOMPM develop by APTA. Since the practice setting of our PT interns remains traditional as to their approach to patient management, it is hoped that using this model will help us align the academic teaching and clinical training of students while at the same time guide us in revising the curriculum into outcomes-based. Using the model will improve the professional skills of the interns in approaching their patients/clients while at the same time improve the clinical reasoning, critical thinking skills, and evidence-based practice of interns as these are essential components of patient management.

Assessment of the clinical performance is a very important aspect of clinical internship program to ensure the correlation between expected outcomes and obtained outcomes of the program. Evaluation is needed in order to provide feedback, to serve as basis to modify or change a behavior or outcome, and to provide information that will be used to establish future performance and activity criteria (Wallace, 1998).

Clinical decision-making is a complex and dynamic process of reasoning and critical thinking which involves judgment in the context of patient care (Jones, Jensen & Rothstein, 1995). In coming up with a clinical decision, the physical therapist must involve the process of selecting, implementing, and modifying interventions according to the unique needs of each patient. Leighton and Sheldon (1997) assert that unifying clarification and understanding with critical and creative cognitive skills are important ingredients to make effective clinical decisions.

Kisner and Colby (2013) emphasized that comprehensive patient management requires knowledge of the process of making informed clinical decisions supported by evidences from scientific literature. Further, providing quality of patient care requires the physical therapist's ability to arrive at sound clinical decisions, solve problems

related to patient condition, and apply knowledge of correlating among conditions, impairments, and disabilities throughout each phase of patient management.

Clinical reasoning is a multidimensional process which a physical therapist must undergo during patient management. It involves a wide range of critical thinking skills to process information, reach decisions, and determine actions. Clinical reasoning can be taken as an internal dialogue that physical therapist constantly employ in clinical practice. The products of clinical reasoning process are clinical decisions which later form as basis of patient/client management (O'Sullivan & Schmitz, 2014).

Requirements for skilled clinical decision-making according to Kisner and Colby (2013) during patient management include the physical therapist's knowledge on pertinent information about the patient condition, past clinical experiences, critical thinking skills, cognitive and psychomotor skills, research skills, and ability to determine options and make strategic plans, and use of reflective thinking and self-monitoring strategies to make necessary adjustments during actual patient intervention.

The clinical practice of physical therapy profession has developed a comprehensive approach to patient management which is basically designed to guide the PT practitioners to deliver services in a systematic series of steps and decisions to help the patient achieve his/her highest level of function possible. The patient management process ends when there is already attainment of functional outcomes by the patient but prior to patient's discharge, the physical therapist must perform re-examination and re-evaluation. It is indicated in the model that the conduct of re-examination and re-evaluation process does not only occur at the end of treatment but throughout each phase of patient management. The ability of physical therapist to make apt decisions and suitable judgments and to develop or adjust an ongoing series of interventions makes transition from one phase of management to the next more effective and efficient.

There are five basic components of patient management process APTA (2001), Boissonnault (2000), Fritz (2005). Examination is the first component of the patient management model. It involves a systematic logical process by which a physical therapist will obtain information regarding problem(s) of the patient and the reasons for seeking physical therapy services. The process also involves both comprehensive screening and specific diagnostic testing for the physical therapist to gather sufficient information about the patient's existing or potential problems which becomes the primary basis for evaluation, diagnosis, plan of care, and intervention. The data obtain from examination can be used as evidence whether the problems of the patient can be appropriately treated by physical therapy interventions. Otherwise, if intervention of the identified problems is beyond the scope of physical therapy practice, then it is

deemed necessary to refer the patient to another health-care practitioner.

The data gathered during examination will also serve as means of establishing baseline measurements of present impairments, functional disabilities, and remaining abilities which will later serve as reference point from which the results of therapeutic interventions can be measured for improvement and documented. APTA (2001) categorized three distinct elements of conducting a comprehensive examination. These include patient's health history, relevant systems review, and appropriate tests and measures. O'Sullivan and Schmitz (2014) elaborates that the process of conducting history taking, the physical therapist will ask questions to obtain an overview of the present and past information (both subjective and objective) in regard to the present condition, general health status (health risk factors and coexisting health problems), and the reasons why the patient is seeking for physical therapy services. Some of the information may be taken from the interviews of patient, family, or caregivers and review of the medical record.

After organizing and prioritizing data obtained from health history, the physical therapist will perform a brief but relevant screening of the body systems, known as a systemic review (APTA, 2001). During history taking, when there is greater number of health-related risk factors identified, the relevance of performing review of systems is much needed. In the general practice of conducting systems review, the physical therapist typically screened the integumentary, neuromusculoskeletal, and cardiopulmonary systems, although problems in the gastrointestinal and genitourinary systems may also be important according to Boissonnault (2000), Boissonnault (2005). This screening process will provide a general overview of a patient's level of cognition, communication skills, and social and emotional responses.

The next step in conducting examination is to perform test and measures once it is decided that a patient's problems/conditions are most likely amenable to physical therapy intervention and to decide which aspects of physical function require further investigation through the use of specific tests and measures by the physical therapist. The results of this process will give in-depth information about impairments, functional limitations, and disabilities (APTA, 2001; Fritz, 2001 & Giallonardo, 1998). In addition, the information generated from these definitive tests and measures are the basis by which the physical therapist will determine possible underlying causes of impairments and functional limitations manifested by the patient.

These tests and measures will also provide the physical therapist a better perspective of patient's current condition and may help discover information not identified during the history and systems review. O'Sullivan and Schmitz (2014) noted that data gathered from specific tests and measures will establish objective

baselines to measure changes in patient's physical status resulting from physical therapy interventions. Further, performing definitive tests and measures are also used to yield objective data for the physical therapist to accurately establish the degree of specific function and physical dysfunction of the patient.

Evaluation is a process that involves interpretation of collected data during examination. It engages the physical therapist to analyze and integrate information to form judgments by means of a series of sound clinical decisions APTA (2001). Although evaluation is described as a distinct entity or phase of the patient management model, some degree of evaluation may be performed in any phase of patient management, ranging from examination until outcomes assessment. Evaluation which primarily involves interpretation of relevant data is one of the more challenging aspects of patient management is important to determine the diagnosis of dysfunction and prognosis of functional outcomes of patient. Further, during evaluation it is useful to determine if and to what extent correlation exists among measurements of impairments, functional limitations, and the patient's perceived level of disability.

After pulling together and sorting out subjective and objective information from examination as part of the evaluation process, the physical therapist should be able to determine the patient's general health status including its effect on the current and potential function, duration and severity of the current condition, degree of impairments of body systems and its effect on functional abilities, patient's current overall level of physical function as compared with the functional abilities needed, expected, or desired by the patient, relationship between physical dysfunction and social/emotional function, impact of the physical environment on a patient's function, and patient's social support systems and their impact on current, desired, and potential function.

Data gathered from the initial examination must then be organized and analyzed because this will serve as basis in developing problem list. This is done by the physical therapist by identifying and prioritizing the patient's impairments, activity limitations, and participation restrictions in the problem list. It is also important during evaluation to accurately distinguish those clinical problems associated with the primary disease and those associated with co-morbid conditions. The decisions made during the evaluation process may also suggest that additional testing by the physical therapist or another practitioner is necessary before the physical therapist can determine the patient diagnosis and prognosis toward positive outcomes from physical therapy interventions.

Guccione (1991) used the term diagnosis in two ways as either process or category (label) within a classification system. Both usages of the word are relevant



to physical therapy practice. As a process, it is an essential component of patient management because it helps directly determine the physical therapy prognosis, plan of care, and interventions (APTA, 2001; Fritz, 2001, Sahrmann, 2000 & Zinny, 2004). The diagnostic process will include integration and evaluation the data from examination to describe the patient condition using terms that will guide the prognosis and selection of intervention strategies during the development of the plan of care (O'Sullivan & Schmitz, 2014).

This diagnostic process is important to develop a prognosis and is a prerequisite for arriving appropriate physical therapy intervention (Dekker, 2003; Jette, 2000 & Zinny, 2004). Aside from being a process, a physical therapist uses diagnosis to classify dysfunctions. Most of the time for the physical therapist, the diagnostic process focuses on the consequences of a disease or health disorder (Zinny, 2004) and is a mechanism to identify discrepancies and consistencies between patient's desired level of function and his or her capacity to achieve that level of function (APTA, 2001).

A prognosis is a prediction of a patient's maximal level of functional capability expected resulting from course of treatment and the anticipated length of time required to reach specified functional outcomes (APTA, 2001). A physical therapist can determine accurate prognosis even at the onset of intervention for some patients. To determine an accurate prognosis is, indeed, challenging even for well experienced physical therapists because in some patients, the more complex a patient's problems, the more difficult it is to project the prognosis, particularly at the onset of intervention.

APTA (2001) delineates the plan of care as an integral component of the prognosis into anticipated goals, expected measurable functional outcomes, extent of improvement predicted and length of time to achieve the outcomes, appropriate interventions, frequency and duration of interventions, and discharge plans. O'Sullivan and Schmitz (2014) emphasized that the major focus of the plan of care is to produce meaningful changes at the personal and social dimensions of the patient by eliminating activity limitations and participation restrictions. Further she noted that improving the quality of life of patient is achieved by facilitating independence in mobility or doing the activities of daily living, return to work, or participation in social and recreational activities.

To develop a plan of care will involve partnership and cooperation between the patient and the physical therapist (APTA, 2001 & Jensen, 2000). The goals and outcomes in the plan of care must be patient-centered to make it more meaningful to the patient and must be measurable and linked to each other. To distinguish between goals and outcomes, goals are geared towards reducing or eliminating the physical signs and symptoms of disease and impairments that limits patient's functional

abilities. On the other hand outcomes are focused on the improvement of physical limitations and disability to the utmost possible functional capacity while at the same time achieving the optimal level of general health and patient satisfaction.

A physical therapist is able to establish meaningful and functionally relevant goals and outcomes by letting the patient or family involve in clinical decision-making process. This because there are some patients who seek physical therapy services not to get stronger or more flexible but to perform physical activities they enjoy doing or must do in their daily lives with ease and comfort. To determine what the patient wanted to achieve after intervention will guide the physical therapist in developing and prioritizing interventions strategies that target the patient's impairments and functional limitations. This, in turn, augments the likelihood of successfully achieving the expected outcomes after interventions (Ozer, 2000 & Randall, 2000).

The plan of care also specifies the measurement and the optimal level of improvement as shown in the functional outcomes. Also, the plan of care contains an outline of specific interventions, frequency and duration of intervention, and the rationale for each intervention in achieving the stated goals and expected outcomes. Finally, the plan of care ends with the criteria for patient discharge.

Intervention is another component of patient management which deals with any purposeful interaction between the patient and physical or if necessary with other individuals who are involved in the patient care (APTA, 2001). APTA (2001) categorized intervention into three broad areas during the course of patient management. This includes coordination, communication, and documentation, procedural interventions, patient-related instruction. All of these areas are essential components of the intervention phase of patient management.

It is necessary for a physical therapist to be skillful and creative in using the three components of intervention, combined with heedful re-examination and re-evaluation of the effectiveness of the interventions to be successful in achieving outcomes and patient's discharge from physical therapy services. If any of these components is absent, then outcomes can be adversely affected.

A physical therapist is required to effectively communicate directly or indirectly with all members of the rehabilitation team (O'Sullivan & Schmitz, 2014) during patient management. He/she acts as the coordinator of physical therapy care and services and must persistently communicate with all individuals involved in the care of patient. Communication as one aspect of intervention encompasses many patient-related administrative tasks and professional responsibilities ranging from written reports to designing home exercise program.

Procedural intervention concerns with specific physical therapy procedures used during treatment. This includes therapeutic exercise, functional training, or

adjunctive modalities such as physical agents and electrotherapy.

Physical therapy encompasses a wide variety of procedural interventions, which can be broadly classified into three main groups. First is the restorative interventions, which are directed toward remediating or improving the patient's status in terms of impairments, activity limitations, participation restrictions, and recovery of function. Second are the compensatory interventions which are geared toward promoting optimal function using remaining abilities and third are the preventative interventions which are designed to limit potential problems and maintain health.

Included in the plan of care are also the procedural interventions. To have an effective procedural intervention, the physical therapist must ensure that it will result to reduction and elimination of impairments and functional limitations and, whenever possible, reduce the risk of developing future dysfunction. Procedural intervention must be supported by sound evidences to ensure its efficacy. To have an effective use of any procedural intervention, the physical therapist must determine the appropriate intensity, frequency, and duration of each intervention and should conduct periodic re-examination of a patient's responses to such intervention given.

The third component of intervention during the patient management process is patient-related instruction. This is the way by which the physical therapist encourages a patient learn how to overcome his/her condition by becoming an active participant in the rehabilitation process. Patient-related instruction may start from providing the patient with background information regarding his/her present condition resulting to his/her present impairments and functional limitations and may be continued by explaining the purpose of specific interventions in the plan of care. Patient-related instruction may also focus on specific areas of a treatment program, such as educating the patient, caregiver, or family member series of exercises to be carried out in a home program, assessing health and wellness materials, or explaining directions for safe use of equipment to be used at home.

Outcomes are the end results of patient management. Hart (2004) emphasize that collection and analysis of outcome data is not an option but rather is a necessity to health-care services. Assessment of outcomes is a mean to determine the quality, efficacy, and cost-effectiveness of services. Monitoring of outcomes is done throughout the duration of physical therapy care, that is, intermittently during intervention and at the conclusion of treatment (Ozer, 2000). These are the areas of outcomes assessment the physical therapists must have to determine: First is the patient's level of physical function, including impairments, functional limitations, and perceived disability; second is the extent of prevention or reduced risk of occurrence or recurrence of future dysfunction related to pathology, impairments, functional limitations, or disability, and third is the patient's general health status or

level of wellness and fitness; and the degree of patient satisfaction.

## CONCEPTUAL FRAMEWORK

Based on the results of the pre-assessment on the patient management skills of interns, the researcher planned to create series of interventions using the Action Research Cycle (ARC) framework to improve the patient management skills among PT interns during their clinical internship program. The components are as follow:

### **Diagnosing**

The pre-assessment was during their regular Saturday back-to-school follow-up session with the clinical coordinator. The purpose of the pre-assessment was to determine the present status in their clinical internship program as regards patient management skills in physical therapy during patient encounters. The tool used was the Physical Therapist Clinical Performance Instrument for Students of the American Physical Therapy Association (APTA), Department of Physical Therapy Education, June 2006.

### **Action Planning**

The results of the pre-assessment were used as the basis in developing a plan for interventions activities. The plan intervention activities were discussed with the clinical coordinator, faculty members, and clinical supervisors. The schedule for the series of interventions was done every Saturday afternoon after the guided review class of the interns.

### **Action Taking**

The intervention activities were implemented for 6 months. The activities included: 1. Appreciative Inquiry on the importance of patient management during the clinical internship program and 2. Lecture-Workshop on Patient Management to include clinical reasoning, screening, examination, evaluation, diagnosis and prognosis, plan of care, procedural intervention, educational intervention, documentation, and outcomes assessment.

### **Evaluation**

The evaluation was conducted five (6) months after the intervention activities started. A post-assessment was conducted to the same participants using the same set of assessment tool used during the pre-assessment. The purpose of this was to determine if there was significant improvement in the patient management skills of

PT interns.

### **Specifying Learning**

The data from the post-assessment was collated and statistically tested and compared with the results of the pre-assessment to determine if there was significant improvement in the patient management skills of PT interns.

## **OBJECTIVES OF THE STUDY**

This study sought to determine the effect of intervention activities on the level of patient management skills among physical therapy interns. Specifically, this study aimed to: 1) assess the level of patient management skills among physical therapy interns before and after the intervention activities; and 2) determine significant difference in the assessment ratings of patient management skills before and after the intervention activities.

## **METHODOLOGY**

This study utilized a prospective research design and conducted within a period of 10 months to determine the effects intervention activities on the level of patient management skills among 20 physical therapy interns who were undergoing their clinical internship program. They were in their third month of clinical rotation and served as the primary recipient of the proposed intervention activities.

The raters of this study were composed of eight (8) clinical supervisors and two (2) clinical instructors who were assigned to monitor and follow-up interns during their clinical rotation. They were responsible for assessing the interns' patient management skills in this study.

The study adopted the Physical Therapist Clinical Performance Instrument of the American Physical Therapy Association, Department of Physical Therapy Education, 2006 with exclusion of some indicators such as financial resources and direction and supervision of personnel which were not applicable in the physical therapy practice in the Philippine setting.

The study involved three (3) phases of data collection. Phase I-Preliminary: The researcher wrote a letter to the Vice President for Academic Affairs for approval to conduct the study. Letters were sent to the clinical coordinator, clinical supervisors and clinical instructors asking for their support and cooperation especially in assessing and patient management skills of interns; Phase II-Pre-Intervention: The researcher started the pre-intervention phase with an ocular survey together with the

clinical coordinator among the affiliated rehabilitation centers. This was followed by random interview among clinical supervisors, clinical instructors, and interns. The pre-assessment tool was used by the clinical supervisors and clinical instructors to assess the patient management skills of interns. The data were then collated, statistically treated, and analyzed. The results of the pre-assessment determined the level of patient management skills of interns and served as standpoint in identifying and analyzing the organizational problems. Based on the identified problems, the researcher developed intervention activities; and Phase III Post-Intervention: After the intervention activities, the same set of participants was assessed using the same assessment tool. The data from the post-assessment were collated and statistically tested and compared with the results of the pre-assessment to determine if there was a significant improvement in the patient management skills of PT interns.

In determining the level of patient management skills among physical therapy interns before and after the intervention activities the computation of mean was used. Paired T-test was used to determine the significant difference in the assessment ratings of the level of patient management skills before and after the intervention activities.

## RESULTS AND DISCUSSION

Figure 1 presents the pre-assessment data and post-assessment on patient management skills of physical therapy interns. The average mean rating of patient management skills of physical therapy interns on clinical reasoning before the intervention activities (IA) is 1.90 which is interpreted as good and after IA the average mean rating becomes 3.72 which is interpreted as excellent. The data reveal that there is improvement of interns in acquiring skills for clinical reasoning especially having logical rationale and evidences from peer-reviewed published articles relevant to physical therapy as basis for clinical decisions. It is noted that interns after the IA develop their ability to utilize information coming from different sources in making clinical decisions within the context of ethical practice of the profession. This result follows the observation of Schreiber and Stern (2009) that the physical therapy profession has embraced the concept of evidence-based practice. Use of EBP is believed to be an important means by which physical therapists can deliver safe and effective interventions, veer away from ineffective and potentially detrimental methods, and ultimately avoid wasting precious resources allocated to healthcare (Herbert, Jamtvedt, Mead & Hagen, 2005). Edwards and Jones (2004) concluded that with diversity of issues that exist in clinical practice, physical therapists develop skills in utilizing a range of clinical reasoning skills or strategies to come up with

clinical decisions. Clinical decisions are the outcomes of the clinical reasoning process and form the basis of patient/client management (O'Sullivan & Schmitz, 2014).

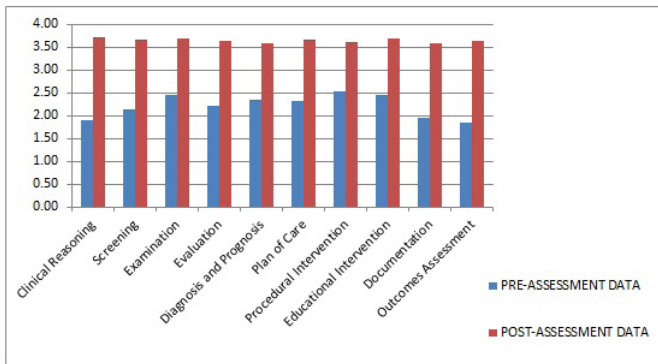


Figure 1. Pre-assessment and Post-assessment Data on Patient Management Skills

Interns are now able to recognize available evidences, clinical expertise, and patient preferences (needs and values) in selecting physical therapy interventions while on the other hand identify those interventions which are not effective for treatment modification. Furthermore, interns are now capable of making clinical decisions following the concept of disability (whole person) rather than the disease itself. The World Confederation for Physical Therapy (2014) believes that physical therapists have a responsibility to use evidence to inform practice and ensure that the management of patients/clients, careers and communities is based on the best available evidence. They also have a responsibility not to use techniques and technologies that have been shown to be ineffective or unsafe. Grignon, Henley, Lee, Abentroth and Jette (2014) also stresses that evidence should be integrated with clinical experience, taking into consideration beliefs, values and the cultural context of the local environment, as well as patient/client preferences.

On screening, the average mean rating prior to IA is 2.34 (good) which improved to 3.66 (excellent) after IA. This means that interns are now able to utilize data from examination such as history of patient, results of systems review, and results of tests and measures to screen the patient prior to the conduct of actual physical therapy intervention. Goodman and Snyder (2007) emphasized that physical therapist must compare the subjective information with the objective findings to identify dysfunction and to rule out systemic involvement which may require medical referral. Early detection and referral is the key to prevention of further significant

co-morbidities or complications.

The interpretation and analysis of examination data by the interns are very important components of the screening process to determine whether the patient is a good candidate for physical therapy intervention or needs to be further examined or referred to other services. It is the physical therapist's responsibility to make sure that each patient/client is an appropriate candidate for physical therapy (Goodman & Snyder, 2007). In screening, the physical therapist determines whether further services are needed from a physical therapist or other health care professional Pagliarulo (2012). There is also an improvement in the skills of interns to conduct musculoskeletal, neuromuscular, cardiopulmonary, and integumentary systems screening at community sites because of their exposure to community-based rehabilitation for at least two months of their clinical rotation CIP Manual, College of Physical Therapy (2014).

Much more important is that Interns are given the opportunity to suggest to their clinical supervisors regarding indications for intervention which is a good point for clinical discussions to achieve better patient management outcomes. Interns as future professional physical therapists, by virtue of their extensive education in normal body structure and function, are well qualified to provide services that prevent or limit dysfunction APTA (2003).

On examination, the average mean rating of interns prior to IA is 2.59 (very good) while after the IA there is an improvement of 3.69 (excellent) in their average mean rating. This means that interns after the IA increase their competence (accuracy, efficiency, and proficiency) in conducting history taking, performing systems review and tests and measures. These competencies are very essential to the physical therapist because as Fairchild (2007) emphasized, the results of examination will establish baseline data and information that describes the patient's current condition and level of function and can be used to measure the patient's progress and response to treatment. They also develop their ability to utilize information from history, other data, and observe necessary protocols in the conduct of patient examination such as selecting evidence-based tests, sequencing tests and measures in a logical manner, and performing regular reexaminations of patient status.

The average mean rating of patient management skills of physical therapy interns on evaluation before the IA is 2.42 (good) which eventually improved to 3.64 (excellent) after the IA. The data reveal that interns develop their ability to use and synthesize information from examination for them to identify and prioritize impairments and functional limitations in the problem list. Kisner and Colby (2014) emphasized that data gathered from the initial examination must then be organized and analyzed. The therapist identifies and prioritizes the patient's impairments,



activity limitations, and participation restrictions and develops a problem list. A physical therapist must have to possess this ability to evaluate since it will be at this stage of patient management that he will make clinical judgment. But APTA (2001) recognized that interpretation of relevant data is one of the most challenging aspects of patient management because it is fundamental to the determination of a diagnosis of dysfunction and prognosis of functional outcomes of the patient.

Interns also improved their ability to utilize patient data they gathered from examination and cited evidences to support in coming up with clinical decisions such as accepting the patient for physical therapy intervention or referring the patient to other medical practitioners for further examination and intervention. Kisner and Colby (2014) noted that decisions made during the evaluation process may also suggest that additional testing by the therapist or another practitioner is necessary before the therapist can determine a patient's diagnosis and prognosis for positive outcomes from physical therapy interventions. Pagliarulo (2012) added that evaluation is an essential step that may involve consultation with others to determine the meaning of the data.

All indicators for patient management skills on diagnosis and prognosis progressed from good to excellent as indicated by average mean rating of 2.35 (good) before IA to 3.59 (excellent) after the IA. The result reveals that interns develop their skills in interpreting and analyzing data from examination relating it to their knowledge in pathology, impairment, functional limitation, and disability in order to come up with patient physical therapy diagnosis. The diagnostic process includes integrating and evaluating the data obtained during the examination to describe the patient/client condition in terms that will guide the prognosis and selection of intervention strategies during the development of the plan of care (O'Sullivan & Schmitz, 2014). Interns improve their ability to integrate data from examination, research and literature, and contributing factors to identify prognostic indicators and to arrive at an accurate prognosis of the patient. Goodman (2007) added that physical therapist use diagnostic labels in order to identify the impact of a condition on function at the level of the system and the level of the whole person. The determination of diagnosis and prognosis is a very important factor for an intern to consider in formulating the plan of care considering the intensity and duration of interventions and discharge status of the patient. This is supported by APTA (2001), Fritz (2001), Sahrman (2000), and Zinny (2004) that diagnosis is an essential element of patient management because it directs the physical therapy prognosis (including the plan of care) and interventions.

The patient management skill of physical therapy interns on plan of care before the IA is 2.33 which is interpreted as "good". After the IA it improved to 3.66 which is interpreted as "excellent". This implies that interns develop their skills in formulating

plan of care of their patients consistent with the results of examination and evaluation in collaboration with the patient, family, and others involved in the patient care. Developing a plan of care involves collaboration and negotiation between the patient (and, when appropriate, the family) and the therapist (APTA, 2001 & Jensen, 2000). Knowing what a patient wants to be able to accomplish as the result of treatment helps a therapist develop and prioritize intervention strategies that target the patient's functional limitations and functionally related impairments. This, in turn, increases the likelihood of successful outcomes from treatment (Ozer, 2000 & Randall, 2000). Interns also make the goals and desired functional outcomes of patient management in accordance to the expected time duration and resources needed to achieve the goals. Much more important, during patient intervention interns are able to adjust and re-evaluate their plan of care based on patient response so as to make progress and modification during intervention and able to discuss the risk and benefits if there are alternative interventions given to the patient to ensure safety and quality of care. Further, interns are able to identify and advice patients who would benefit from further follow-up or access to other rehabilitation services after they are discharge from the hospital.

The average mean of patient management skills on procedural intervention of physical therapy interns prior to IA is 2.53 (very good) which improved to 3.62 (excellent). This denotes that in the course of IA and with constant feedback and supervision of interns during their clinical rotation they develop their skills in performing procedural interventions safely, effectively, efficiently, and competently manner to their patients. It is also evident that the procedural interventions they gave to their patients are aligned with their plan of care and are able to utilize alternative strategies to accomplish the functional goals of the patient. Interventions are contingent on the timely monitoring of patient/client response and the progress made toward achieving the anticipated goals and expected outcomes (Guide to PT Practice, 2008). Intervention is implemented and modified in order to reach agreed goals (PPTA, 2014).

Interns are also able to adjust procedural intervention strategies according to the personal profile and responses to treatment of their patients. Effective use of any procedural intervention must include determining the appropriate intensity, frequency, and duration of each intervention and periodic reexamination of a patient's responses to the interventions (Kisner & Colby, 2014). Further, interns are able to discuss with the family some procedural strategies on how to prevent the occurrence of secondary complications or injuries as well as concepts of self-efficacy in wellness and health promotion to improve function.

There is an improvement in the average mean rating of the patient management

skills of physical therapy interns on educational intervention after the IA which is evidenced by 2.45 (good) before IA to 3.70 (excellent). Patient education is one key area that an intern should develop in order to achieve the highest level of patient's functional outcomes. The process of informing, educating, or training patients/clients, families, significant others, and caregivers is intended to promote and optimize physical therapy services (Guide to PT Practice, 2008). In so doing, during the course of IA with close supervision and feedback by the clinical supervisors and instructors, interns develop their skills in identifying the learning preferences, educational needs, and barriers to learning so that they may be able to modify their interactions with their patients. This improvement abides with the recommendation of Pagliarulo (2012) that educational intervention should always incorporate the learning abilities and style of the patient/client and caregiver. Moreover, interns are now able to apply their knowledge and skills in physical therapy to educate their patients in solving their problem and promoting health, wellness, and fitness.

All patient management skills indicators on documentation progress from good to excellent with average mean of 1.95 (good) before IA to 3.60 (excellent) after IA. Before IA, there was an urgent need for the interns to improve their skills in documentation especially in selecting relevant information to document following the SOAP format but after the IA it is noted that they improve in this area. Pierson (2007) emphasized that SOAP notes should contain important, relevant information about the patient; it should indicate and clearly reflect the patient's condition and subsequent changes in the condition; and it should be written frequently so information is reported promptly and regularly. They also demonstrated improvement in the organization and selection of contents in documenting relevant information following guidelines and format required by the affiliation center.

Documentation is one of the basic requirements an intern must have for each patient that he/she handled. Documentation is becoming more and more important as a means to assess or measure the quality of care received by the patient. This does not only serve as a tool in monitoring the progress of the patient but more importantly it also serves as basis for sound clinical decision making. In this manner, interns must document all aspects of physical therapy care accurately, concisely, timely and legibly (Pagliarulo, 2012). Well-organized, accurate, relevant, and prompt documentation improves communication among the persons providing care (Pierson, 2007). In addition, intern must have to describe accurately the documentation of care delivery that justifies physical therapy services because this will serve as basis for financial obligation of patient after discharge. These areas of documentation improved after the IA.

There is improvement in all indicators on outcomes assessment of physical therapy

interns from good to excellent as indicated by its average mean rating of 1.86 (good) before IA to 3.63 (excellent) after IA. The clinical practice of physical therapy in the local setting poorly recognized the importance of outcomes assessment as part of patient management. This is contrary to the statement of Hart (2004) that collection and analysis of outcome data related to health-care services is a necessity, not an option. The researcher personally observed during his clinical visits that PT clinicians and interns seldom conduct assessment of goals interventions every end of monthly clinical rotation to determine the effectiveness of patient management. Again this practice differs from the recommendation of Ozer (2000) that outcomes should be monitored throughout an episode of physical therapy care, that is, intermittently during treatment and at the conclusion of treatment. Much more that PT facilities seldom conduct assessment to know the level of patient and family satisfaction as regards delivery the of physical therapy care.

That is why, during IA with the interns and clinical supervisors, it was emphasize to them the value of outcomes assessment (such as assessment of goals, interventions, quality of care, and satisfaction of patient) as an integral component of patient management which eventually improve after the IA. Physical therapists are expected to demonstrate improved outcomes for individual patients (Scherer, 2007). The Guide to PT Practice (2008) further noted that throughout the entire episode of care, the physical therapist should determine the anticipated goals and expected outcomes for each intervention.

Table 1. Comparison of Pre and Post Intervention Data on Patient Management Skills of Physical Therapy Interns

Patient Management Skills	Pre-Intervention Data	Post-Intervention Data	Mean Difference	Paired t Value	P value	Decision on Ho	Interpretation
Clinical Reasoning	1.9042	3.7188	1.815	15.75	0.000	Reject	Significant
Screening	2.1275	3.6575	1.5300	16.53	0.000	Reject	Significant
Examination	2.4417	3.6889	1.2472	20.34	0.000	Reject	Significant
Evaluation	2.2188	3.6438	1.4250	18.24	0.000	Reject	Significant
Diagnosis and Prognosis	2.3550	3.5950	1.2400	18.65	0.000	Reject	Significant
Plan of Care	2.3273	3.6591	1.3318	17.19	0.000	Reject	Significant
Procedural Intervention	2.5325	3.6200	1.0875	16.28	0.000	Reject	Significant
Educational Intervention	2.4545	3.7000	1.2425	19.67	0.000	Reject	Significant
Documentation	1.9528	3.5972	1.644	13.04	0.000	Reject	Significant
Outcomes Assessment	1.8531	3.6344	1.781	15.39	0.000	Reject	Significant

Table 1 is the comparison of pre and post intervention data on patient management skills of physical therapy interns. The data show that there is significant difference in the mean ratings of all variables on patient management skills before and after the intervention activities have been discussed, applied, practiced, and monitored. Therefore, the null hypothesis is rejected.

The appreciative inquiry session greatly helped the interns to realize their ideal and personal aspirations about the physical therapy profession. They were able to imbibe the core value of excellence as physical therapy interns which they are going to apply in their respective workplace and the world that they will serve as physical therapists in the future. The session also aided the interns to identify the factors that will help the physical therapy interns to improve their patient management skills, analyze why such factors help them during clinical internship, and recommend mechanisms/innovations for sustainable quality patient care.

The series of lectures and workshops that the physical therapy interns went through made them realize their weaknesses and appreciate their strengths thus empowering them with the desire for change to improve their clinical performance. Having conscientiously participated in the intervention program has made the interns more dynamic by being aware in monitoring and improving their own clinical performance in patient management.

## CONCLUSIONS

It is concluded that intervention activities have positive effects on the clinical patient management skills among physical therapy interns. Using the comprehensive outcomes-oriented model of patient management improved their patient management skills at the same time enhanced their clinical reasoning, critical thinking skills, and evidence-based practice which are essential components of physical therapy clinical practice.

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