SUGGESTIONS FOR WRITING A CASE REPORT

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In the October 1989 issue of Physical Therapy, the current editor of Physical Therapy proposed the need for expanding the body of clinical literature in physical therapy. 1 Rothstein invited clinicians to submit well-documented case reports that would contribute to base of practical knowledge and theory underlying the clinical practice of physical therapy. Over the past several years, many case studies have appeared in Physical Therapy. Despite the overwhelming response to Rothstein's original appeal, there is a continued need to encourage clinicians to share their invaluable experiences with others.

The educator is one of many roles portrayed by the physical therapist. Whether it is the education of a patient, student physical therapist or peer, the physical therapist transmits knowledge that reflects a cumulation of unique and valuable experiences. Such wisdom should not be lost, but instead integrated into the body of knowledge that defines the profession of physical therapy. The case report is a mechanism to document and thus share such information with others in the field.

Anyone interested in writing a case report should not feel intimidated by the process of doing so. Guidelines for preparing a quality case report have been recommended. 2 The purpose of the present discussion is to summarize these suggestions. In addition, methods used in recent case studies published in Physical Therapy are cited to add clarity to the process of writing a case report. Before outlining the guidelines for preparing a case report, it is helpful to review the definition of a case study. Bolgar 3 has defined the case study as "the process of collecting the data and the body of the data itself and their clinical and didactic use". Kazden 4 has described the case study "to consist of uncontrolled reports in which one individual and his or her treatments are carefully reported and inferences are drawn about the basis of therapeutic change". Both definitions are helpful in gaining understanding of the advantages and inherent limitations of the case study method. Among the advantages, the case study may be used to cast doubt on the validity of theories, or to provide the groundwork for the development of new theoretical assumptions. The case report also serves as a medium to share innovative evaluation or treatment techniques with others. It is also useful to describe successful and unsuccessful methods for solving typical and unique patient problem. Lastly, results of a case study may stimulate the development of new research hypotheses that can be subsequently tested empirically. 5, 6 Although many positive outcomes may stem from the case study, interpretation of the results must be made with caution. Limitations in the ability to impose experimental control presents a threat to the internal validity of the case study. 6 Unlike carefully controlled experimental designs, cause-effect conclusions cannot be drawn from the results of a case study.

Despite its limitations, the integrity of the case study can be enhanced. Through careful selection of treatments and the means for detecting the intervention outcomes, the investigator substantiates the study's methods. In addition, the case report should be thorough and its methods detailed, such that, the study can be replicated by others. McEwen 2 has recently described a format for those who are interested in writing case reports. The format is similar to that of the research report, including introduction, methodology, result, and discussion sections. According to McEwen, 2 the introduction should explain the importance of the case study, and provide rationale for selecting the treatment intervention and outcome measures. In a case report by Johnson and Silverberg, 7 an effective rationale for serial casting during the acute management of burns was provided. The introduction of the case included a review of the physical and
functional sequelae of a burn injury. Discussions of the physiological benefits of prolonged muscle lengthening, and the value of using casts to promote wound healing were also included in the introduction. In a case report by Harris, et al., a multiple subject study was described. The introduction of the report began with the authors expressed concern for the lack of physical therapy literature describing the assessment or treatment of individuals with fetal alcohol syndrome. Specifically, the need for studies that assessed children at repeated intervals from infancy to early childhood was identified. The rationale for selecting psychomotor and cognitive assessment tools was also stated in the introduction of the case report.

McEwen’s tips for writing a case report also recommended content for the study's methods. Descriptions of the subject(s) under study, the evaluation and intervention procedures, and the measurement procedures applied to determine treatment outcomes should be detailed. Barden, et al. provided an extensive description of two individuals diagnosed with wrist subluxation secondary to inflammatory arthritis. The subjects' age, gender, history of present illness, concurrent medical management (splinting and medication) and radiographic studies were described. McCulloch and Kemper included the surgical and postsurgical wound management in the description of a patient diagnosed with a superficial femoral artery occlusion. In addition, the authors provided a picture of the patient's wound as it appeared at the time of the initial physical therapy contact.

The method section of the case report should also specify the decision making processes used by the clinician to select the treatment(s). In addition, the treatment procedures should be defined so that another clinician can easily replicate them. Gill-Body et al. provided a clear description of the rehabilitation activities prescribed for two patients with peripheral vestibular dysfunction. The treatment activities and their rationale were outlined in separate tables for each patient. Host also provided a detailed definition of the treatment activities prescribed for a patient with anterior shoulder impingement. Besides exercise, scapular taping was used in the management of the patient's pain and scapular posture. Host provided a series of photographs clearly depicting the scapular taping technique.

Many case studies appearing in Physical Therapy have used the same measurement tools and procedures for assessing the patient and determining treatment effectiveness. Host reported changes in pain, range of motion, resting scapular posture, and muscle strength to illustrate the treatment outcome of a patient suffering from an anterior shoulder impingement. Detailed descriptions of each measurement tool and procedure were provided. Host also reported the intrater and interter reliability of the selected measures. Carmick provided extensive descriptions of the lower and upper extremities of children with cerebral palsy before and following treatment with neuromuscular stimulation. Photographs of the children creeping, manipulating objects, walking, and running were used to show changes in upper and lower extremity function. Hakim, et al. employed the Oswestry Low Back Pain Questionnaire and the Sickness Impact Profile to assess the disabilities and handicaps of patients with pelvic-ring fractures managed by open reduction internal fixation. Reliability of both scales and the validity of the Sickness Impact Profile were reported. In the same case study, forward bending, lifting, and gait were assessed to determine the patients' physical performance. Detailed descriptions of the data collection processes for these measures were provided. Reliability of the methods for measuring lumbar flexion and gait was reported.

The result section of the case report should include statements of fact. The outcomes of the treatment should be clearly communicated. Both favorable and unfavorable treatment results should be reported. A discussion of the findings should follow the results. The discussion section provides a forum for the investigator to reflect on the success or failure of the treatment. It provides the investigator an opportunity to address how the study's findings relate to other clinical observations and research. Cromwell and Paquette examined the effectiveness of botulinum toxin A injections to improve the function of an individual 5 months post-brain-stem infarction. Injections to the quadriceps femoris failed to reduce lower extremity involuntary movements. The authors attributed the treatment failure to an insufficient dose of the neurotoxin. Involuntary elbow
flexion movements, however, were reduced following injections to the biceps brachii. In addition, the patient demonstrated greater ability to use his arm to roll, move in bed, transfer and walk with a walker. The authors speculated that the decrease in involuntary arm movements combined with physical therapy positively effected the patient's ability to function. The authors discussed the results as having potential impact on the level of care needed by the patient following discharge from rehabilitation. Carmick observed that electrical stimulation to the triceps surae of children with cerebral palsy was more effective in improving plantigrade gait than stimulating the tibialis anterior muscle. Applying an assumption that the triceps were spastic, one would have expected greater results by stimulating the tibialis anterior. Carmick related this intriguing finding to the developmental stage of the child. She cited literature that suggested that children with cerebral palsy show less ability to activate the gastrocnemius than the tibialis anterior during gait. She speculated that a lack of coordination in triceps surae muscle strength, and not the lack of tibialis muscle activity contributed to the observed results.

Whatever results are obtained through a case study, one must be careful not to suggest a cause-effect relationship between the intervention and outcome. In addition, one must be careful not to generalize the results beyond the particular case under study. Instead, the value of the case should be discussed with respect to the ideas, hypotheses and research questions that it generates.

The proceeding discussion has reviewed guidelines for planning and writing a case report. Not all of the suggestions will be relevant to every case. I encourage all of you to review the case studies that I have referenced in this discussion. Each case is unique and valuable in its own way. I also encourage you to keep your eyes open for case studies as they appear in future issues of Physical Therapy. I know that I will. Perhaps I will even get to read one written by you!

References


