



Case Studies in Therapeutic Recreation

Sherri Hildebrand and Rachel E. Smith

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in
Therapeutic Recreation



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Rachel E. Smith

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To our students past, present, and future, always remember,
“The expert in anything was once a beginner.”

–Helen Hayes

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Acknowledgments

My 10-year-old Barnes and Noble mystery-loving niece found out we were writing a book and she squealed with excitement. “Can I read it?!” “It’s not that kind of a book,” I responded. “Oh, I thought you were an author,” she lamented. I told her it was a schoolbook that I was writing with a colleague and a friend. “Oh, so it’s not cool.”

I found myself stammering and explaining. “No, it’s not cool. Not in a Harry Potter kind of way. But it is cool in a care about the environment kind of way.”

Our conversation stayed with me as we progressed through the tedious process that is writing. I have wondered how many little girls wanted to be authors only to find themselves behind the keyboard of a textbook? For that matter, how many students can’t wait to pick up their textbooks for the semester and snuggle up for a nice night of reading?

Books for education can be both purposeful and entertaining, and ones that aspire to help the profession move forward can even be cool. That is our goal. We hope that somewhere in this text, you find joy in learning. Our hope is to inspire people to question and research and conduct evidence-based practice to help the next generation of recreation therapists explore what it is we do and why and how it helps others.

So yes, it is cool. But in the same way being in the high school band is a different kind of cool than being in a rock band.

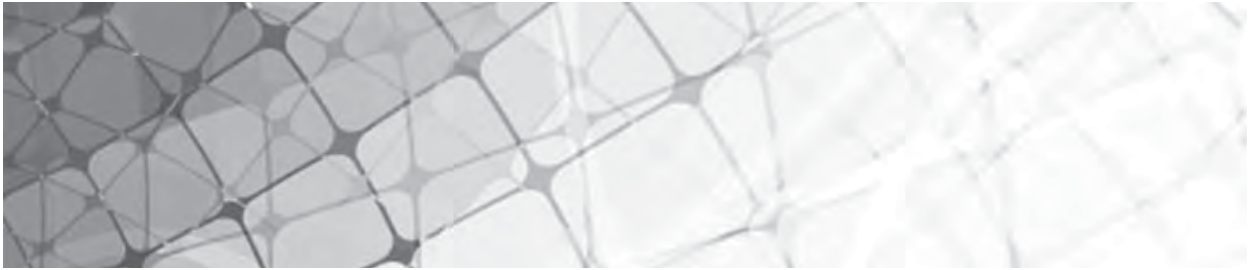
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Section I: Introduction



To assist the therapeutic recreation profession in competing for efficacy with other areas in clinical settings, college curricula need to better prepare students for meeting client needs in the current practice of health care. With inclusion of the International Classification of Functioning, Disability, and Health (ICF) and evidence-based practice in therapeutic recreation, a textbook that allows students the opportunity to apply information learned throughout their coursework to practice is essential to more clearly demonstrate the efficacy of the profession.

Problem-based learning is a “process by which new knowledge is gained by activation of previous knowledge and connection to a new learning situation” (McMahon & Christopher, 2011, p. 3). The method of student-centered learning has demonstrated a number of benefits for students, including self-directed learning, creating relevance and application of knowledge to real-life situations, and collaborative learning (Amador, Miles, & Peters, 2006).

Case studies have been used extensively in medicine, law, and business education as a tool in problem-based learning. Good case studies “are designed to help learners analyze data, identify problems, and determine options for solving problems (McMahon & Christopher, 2011, p. 2). To meet the needs of today’s therapeutic recreation students, a textbook using case studies is needed to guide the student toward informed decisions of care.

Case Studies in Therapeutic Recreation focuses on problem-based learning using case studies to describe disabilities, diseases, and conditions often seen in recreation therapy practice. Each case tells the story of a person living with a medical condition or disability. Details are provided about how a recreation therapist may encounter working with or for an individual. In addition, pertinent questions guide the reader toward a greater knowledge and application of the planning phase of the therapeutic recreation process.

The use of evidence-based practice is included in each case, encouraging the reader to become more knowledgeable of the clinical process and to explore research conducted on the diagnoses and interventions successfully used that apply to therapeutic recreation.

Case studies include a mix of clinical and community settings such as long-term care; inpatient rehabilitation; residential and outpatient facilities for mental health, substance abuse, and at-risk youth; and community parks and recreation programs, camps, and schools.

Goals of this Book

The goals of *Case Studies in Therapeutic Recreation* include the following:

1. To serve as a companion book to Heather Porter’s edited book, *Recreational Therapy for Specific Diagnoses and Conditions*
2. To reinforce previously learned knowledge from courses in the therapeutic recreation college curriculum.
3. To provide an opportunity to develop problem-solving skills by identifying client information necessary to the application of the therapeutic recreation process: assessment, planning, implementation, and evaluation (APIE).

4. To provide an opportunity to develop critical thinking and problem-solving skills necessary to develop a program plan from case study information.
5. To understand language used in a clinical setting
6. To recognize signs and symptoms of various health conditions and their effects on a client's participation in leisure and recreation
7. To apply knowledge of the use of specific assessments and intervention techniques for a variety of health conditions in clinical and community settings

The Audience

This text has a wide audience, including students, faculty, and practitioners. *Case Studies in Therapeutic Recreation* is intended for therapeutic recreation students who have completed most or all of the therapeutic recreation coursework before embarking on the final fieldwork experience. Additionally, because of the comprehensive nature of the health information presented, this book can be used as an additional resource when preparing for the certification examination given by the National Council for Therapeutic Recreation Certification (NCTRC).

Therapeutic recreation faculty will also benefit from using *Case Studies in Therapeutic Recreation* in their coursework as in-class activities or as material for assignments.

Lastly, practitioners will benefit from learning how to develop research questions, conduct evidence-based research, and practice applying the research to choose appropriate interventions.

Organization of the Book

This book is organized in two sections. Section I presents information on problem-based learning and evidence-based practice. Section II presents 40 case studies listed alphabetically by diagnosis.

In each case study, client information is presented in a narrative style and includes most of the following elements as is relevant for the setting and diagnosis:

- A description of the practice setting
- Client description, including client demographics, history of the present illness, past medical history, information about the family, living arrangements and family support, preferred leisure activities, social history, current diagnosis, and how the client came to be at the facility
- Information shared by the treatment team/patient chart or other sources (when appropriate), medications, allergies, physical examination and lab test results
- A list of the client's recreation/leisure goals
- Practice questions to guide a conversation for deeper learning

How to Use this Book

The intent of this book is twofold: to give therapeutic recreation students classroom experience in applying the APIE process using evidence-based practice, and to guide the therapeutic recreation instructor using problem-based learning to help his or her

students achieve this goal. Practitioners may benefit from a review of these processes as well.

You may choose to use select case studies to problem solve as a group. Alternatively, individual case studies may be assigned for practice or graded assignments. After learning introductory material on disabilities, students may brainstorm resolutions to case studies, evaluate cases in alternate settings, or create case studies of their own. We recommend a quick review of each problem-solving method to determine which approach is suited to your needs.

You may choose to read the sections on evidence-based practice and start to explore the literature on this topic. We recommend reading the PICO section and practice developing PICO questions. The reader can then move on to the research portion and begin doing research on evidence-based interventions. Section I serves as the foundation for understanding the cases presented in Section II.

Note: It is important to remember that a case study represents only one case. It is difficult to make generalizations about people based purely on diagnosis. It is not the intent of the authors to imply that all persons with a specific disability present in the same way. Please, always consider individuals as holistic beings. The cases are intended as teaching tools only.

Problem-Based Learning



It's impossible to teach therapeutic recreation students everything they need to know for professional practice, considering the wide variety of settings in which they may choose to work. Most therapeutic recreation students have limited experience with the variety of disabilities and conditions they may encounter in the profession; therefore, it is logical to choose pedagogical methods that will give them exposure to a variety of diagnoses within a variety of settings. Practice in problem-solving methods has transference to multiple settings. Problem-based learning using the case study method is a pedagogical method designed to facilitate this type of learning.

Problem-based learning is an interactive learning environment designed to promote problem solving from reading case studies simulating situations they may encounter in the profession. Students are introduced to “authentic clinical problems which imitate the health care setting” (McMahon & Christopher, 2011, p. 3). Using this method helps to develop critical thinking and problem-solving skills.

The idea of problem-based learning is credited to Don Woods of McMaster's University in Canada. After its successful use in educating McMaster's medical students, it became a popular method for medical education worldwide (de Graaff & Kolmos, 2007).

Generally, problem-based learning is structured using small groups. Students are instructed to apply previous knowledge to a new situation, thereby creating new knowledge. To maximize knowledge acquisition, the context of the new situation must be “closely related to the expected future use of that knowledge” (McMahon & Christopher, 2011, p. 3). Group work provides opportunities for collaboration. In clinical settings, collaboration is demonstrated in interdisciplinary team meetings where information is communicated among the different disciplines to achieve the best outcomes for the patient.

This book introduces two problem-solving models: the DENT model and the Rehab-CYCLE model. Each problem-solving model takes the reader through a series of steps to reach a conclusion, but they differ in the types of problems they address.

While the generic DENT model can be used for a problem of any kind in any setting, the Rehab-CYCLE model is intended to be used with clinically based problems that use terms specific to the International Classification of Functioning, Disability, and Health (ICF).

At the end of each case study, the “Next Steps” direct the reader to use one of the two problem-solving models introduced in this book to decide upon an appropriate intervention for the client or patient described in the case. Although the reader is free to use any problem-solving model he or she wishes for any case, the Rehab-CYCLE model is suggested for use in clinical settings only.

The DENT Problem-Solving Model



Problem-based learning often uses problem-solving models to identify the problem and gather information to come to a logical and authentic conclusion. One basic problem-solving model that can be used is the DENT model by Peter D. Ommundsen (2001). Ommundsen uses the acronym DENT to mean define, explore, narrow, and test: define the problem, explore possible solutions, narrow your choices, and test your solution (Ommundsen, 2001). A sample worksheet for the DENT model can be found in Appendix A.

According to Ommundsen (2001), “the key to managing a [problem-based learning] session is providing continual feedback to maintain student enthusiasm while simultaneously prolonging the resolution of the problem to ensure that adequate learning occurs” (para. 8). Ground rules for the learning experience must be established before the session.

Ommundsen (2001) suggests that students form small groups to begin the problem-solving process. The instructor presents a problem to the class; in this case, the problem is a brief statement regarding a medical diagnosis. Students are then instructed to begin exploring the problem, recalling previously learned information about the diagnosis mentioned in the problem statement. Use of their textbook or the internet is not allowed at this point; this step in the problem-solving process is meant to draw on the students’ previous knowledge.

After giving the students a few minutes to conclude the current task, the instructor asks each group to share their information with the rest of the class. The instructor then provides feedback about each group’s contributions and encourages class discussion regarding the information.

At this point, to encourage further exploration of the problem, the instructor should add more information about the diagnosis and repeat the process above.

After all information about the diagnosis is given to the students, they are asked to find a solution to the problem. It is important to note that there is typically no one “right” solution, although some answers may be more appropriate than others depending on the setting and resources available. Giving the students freedom to explore and come up with their own “answers” after drawing on previously learned information may result in different solutions to the same problem. In therapeutic recreation, researching appropriate assessments and intervention techniques can produce a variety of solutions.

A major benefit of problem-based learning is that it “offers the flexibility to consider problems from many perspectives and therefore has the potential to prepare students for actual practice” (McMahon & Christopher, 2011, p. 3). Since university curricula in recreation therapy centers on the APIE process (assessment, planning, intervention, and evaluation), the logical approach to use after the student learns the basics of this

process is applying this information to real-life settings. Problem-based learning using recreation therapy case studies promotes this by presenting real-life scenarios that challenge the student to work through the APIE process while applying the DENT method of problem solving in therapeutic recreation. It is an effective technique to apply information learned in the classroom to realistic case examples in various practice settings.

The DENT problem-solving model may also be used among practitioners to brainstorm new interventions or ways of interacting with existing clients. Often we fall into a habit of repetition. Interventions are offered because they were in place before we began at the agency, and thus we continue them. The DENT problem-solving model encourages you to deeply explore the evidence behind the practice to determine the best intervention for your clients.

Evidence-Based Practice



Evidence-based practice had its official beginnings in 1992 when the Evidence-Based Medicine Working Group released its article in the *Journal of the American Medical Association* calling for a better method of determining appropriate care for patients in health care. Evidence-based medicine was subsequently defined as “the conscientious and judicious use of current best evidence from clinical care research in the management of individual patients” (Sackett, Rosenburg, Gray, Haynes, & Richardson, 1996, p. 71). The application of evidence-based medicine is known as evidence-based practice and is increasingly being used by physicians, nurses, and allied health practitioners to guide their patient care decisions.

The purpose of evidence-based practice is to provide best health care practices to improve “the predictability and causality of services outcomes... [to provide] regulators, payers, and consumers increased assurance of quality care (Stumbo, 2003, p. 25). This is accomplished by making “treatment decisions based on client preference, clinical expertise, and current research in a variety of modalities” (Mrkic, 2011, p. 2). It must be understood that evidence-based practice is not controlled by research evidence, but instead requires that research evidence be integrated with the professional’s clinical experience and the preferences of their clients (Mrkic, 2011). Evidence-based practice can be clearly depicted in Figure 1.

Adams and Titler (2007) remind us that one of the elements necessary to qualify a practice field as a profession is the presence of a “distinct body of research-based knowledge” (p. 5). In the field of recreation therapy, evidence-based practice is relatively new and is additionally challenged by the lack of discipline-specific quantitative research from which to draw. For recreation therapy to be recognized as a profession, the body of research-based empirical evidence must grow to include evidence-based practice.



Figure 1. Relationship between clinical expertise, research evidence, and patient preferences in evidence-based practice.

Today, insurance companies, accrediting bodies, and the consumer demand accountability, effectiveness, and efficiency in all health care professions. Those professions that are unable to demonstrate their efficacy risk denial of insurance coverage, accreditation, and ultimately elimination as a profession. Therefore, it is imperative that recreation therapy professionals make evidence-based practice a priority and provide the evidence needed to demonstrate accountability and value as a health care profession. Unfortunately, a CTRS with a bachelor's degree in recreation therapy is less likely to use evidence-based practice than a CTRS with a master's or doctorate degree (Mrkic, 2011). It is vitally important to the profession that evidence-based practice be integrated into recreation therapy education at the undergraduate level.

Forming the PICO Question



How do we know which intervention to choose? Certainly, we must base our intervention strategies on the needs and deficits of our clients as ascertained from the assessment. However, most of our clients have several interests, and to complicate things, multiple interventions can be used to reach the same goal. Additionally, new techniques may sound exciting and interesting to try, but do they work and can we justify the expense of new equipment or the possibility of the intervention having adverse effects? Using evidence-based practice can save time and money as well as provide administrators with documentation to demonstrate successful outcomes.

Embedding evidence-based practice into selecting appropriate interventions and facilitation techniques need not be overwhelming or difficult. This task is not limited solely to university professors and medical doctors. Recreational therapists can use basic Internet and library searching to help find evidence-based practice and determine the proper intervention for their client. PICO (Patient/Participant/Problem, Intervention, Comparator, Outcome) is one method to help reach this goal.

PICO is a process used in many clinical fields to assist in developing research questions and is heavily used in fields that value evidence-based research to justify changes to practice or procedure. Once you have developed a PICO question, you then search for key terms to find journal articles and success stories showing interventions that have worked for other practitioners. By removing the guesswork out of the intervention selection, it allows you to apply interventions that produce desired outcomes. PICO isn't limited to formal researchers in white lab coats in highly specialized fields of study. Follow the steps below to learn how to formulate your own PICO question.

Patient/Participant/Problem

The first step in PICO is to learn as much as you can about the patient or participant who needs the intervention. Think about the characteristics of the specific person. What do you know about this individual? This data may be gathered from a participant registration form, client chart, family members, treatment team members, or a personal interview with the client.

Next consider the dimensions of diversity this person has. What do you know about this person's disability, race, gender, age, religion, sexual orientation, recreation preferences? What do you generally know about the demographics of this group of people? Consider facts relevant to the population and not generalizations or stereotypes. Make notes while reviewing the characteristics of the population.

For example, John is a 54-year-old African American male recently diagnosed with Parkinson's. In looking at this statement, you need to know the typical symptoms of

Parkinson's, then move more in depth into what is known about John. He is 54 and African American.

Table 1

PICO Worksheet Example: Patient/Participant

Patient/Participant	Intervention	Comparator	Outcome
John 54 African American Parkinson's			

The PICO analysis works well to help us find specific search terms regarding a specific patient or participant, but it also works in research questions regarding specific problems. We may wonder about evidence of an intervention or technique in general without a specific client in mind. In this case, complete the chart with the problem topic. For example, is there evidence to support mindfulness as a stress reliever?

Table 2

PICO Worksheet Example: Problem

Problem	Intervention	Comparator	Outcome
Stress			

Intervention

The second step in the PICO process is to determine the intervention. An intervention is a systematic method designed and implemented to improve, reduce, or eliminate needs or deficits. What is the technique, strategy, or process you are interested in researching? Recreation therapists use a variety of techniques. Choosing the best method of changing behavior is essential for client success. For example, you may have heard that dancing is an effective technique to control the tremor for individuals with Parkinson's, but does any research exist to prove it? Perhaps it is just rumor, urban legend, or hearsay. Dancing may have helped one person with Parkinson's, but does it help all people with Parkinson's? Do males with Parkinson's benefit from dancing more than females with Parkinson's? Our research into evidence-based practice now helps in decision-making. For example, the intervention in question is dance.

Table 3

PICO Worksheet Example: Intervention

Patient/Participant	Intervention	Comparator	Outcome
John 54 African American Parkinson's	Dance		

Comparator

The third step is the comparator. What should we compare the intervention to or against? Is one intervention better than another? Is doing something better than doing nothing? A comparator examines alternative methods and determines which is best. For example, we want to investigate dance as the intervention. Suppose you've heard that ice skating can also steady a Parkinson tremor. Which intervention should we use with John? Is dance better than ice skating?

Table 4

PICO Worksheet Example: Comparator

Patient/Participant	Intervention	Comparator	Outcome
John 54 African American Parkinson's	Dance	Ice-skating	

In some cases, there may be no comparator. You may look only at the intervention compared to a control group that receives no intervention. In John's case, then, we might ask is dance better than doing nothing at all?

Table 5

PICO Worksheet Example: No Comparator

Patient/Participant	Intervention	Comparator	Outcome
John 54 African American Parkinson's	Dance	No intervention	

Outcomes

Lastly, outcomes address our expected results from the intervention. What are the consequences for the patient if we use a specific intervention? To follow through with our example for John, the results we are working towards are calming his Parkinson tremor. Other outcomes could also be evaluated relating to Parkinson's depending on what leisure goals John has.

Table 6

PICO Worksheet Example: Outcome

Patient/Participant	Intervention	Comparator	Outcome
John 54 African American Parkinson's	Dance	Ice-skating	Calm tremor

Putting It All Together

Now that you have learned how to formulate a PICO question, practice writing your questions. Use the worksheet in Appendix B to practice. What do you want to know? For some, it is helpful to start with the outcome. What is the end result you want for your patient?

- P = Patient or Problem
- I = Intervention
- C = Comparison (if you want to compare to other interventions)
- O = Outcome (results)

Once you have your PICO you are ready to do research! Search databases and review articles for the most relevant evidence to determine which intervention is the right one for your client. Research is discussed in the next section.

Doing the Research



Myths abound at the mention of the terms “Internet research.” We begin this section by dispelling some of the misconceptions surrounding Internet research and conclude with some basic steps to get you started.

Research is a word that has some scary connotations. Do a quick Google image search of the word “research.” You will find pictures of people looking at walls of formulas, standing in front of dry erase boards with complex equations, or hovering over desks piled with mounds of paper. Other images include magnifying glasses and question marks.

Now add “er” to the end. The word *researcher* produces slightly different image results. Researchers, according to popular Google images, wear white lab coats and do experiments with test tubes or models representing genetic code. For the average recreational therapist, this IS scary! But research really can involve electronic data and scientific inquiry. Put another way, your computer and a good organized question can legitimately be research.

So, it’s easy, right? We all use the Internet. We just ask Google and we get the answers we’re looking for. We get the answers to the universe and our clients are cured! This sarcasm brings us to another myth about Internet research: Everyone knows how to do it. However, not all searches are created equally. Using the correct terminology or quotes around a phrase can make a significant difference in the results generated. Knowing which databases to search can save a lot of time sifting through the results. Formulating a sound PICO question will help narrow down your search terms.

This myth relates closely with the next one: if it’s on the Internet, it’s got to be true. Not all sources found in the Internet are valid. You may find anecdotal information in a person’s blog about a wonderful intervention, but that doesn’t mean it will work for your client. A blog is just that person’s opinion. We can also find great activity ideas on Pinterest, but this is hardly scientific. To really use evidence-based practice, we need to find the information and then evaluate it to determine if the source is valid. To find meaningful and scientific information, we use peer-reviewed sources to ensure experts in a specific discipline have evaluated the literature before publication. Examples of peer-reviewed sources are the *Therapeutic Recreation Journal* and the *American Journal of Recreation Therapy*.

How and Where to Search

Google can be a source for scientific research. You read that correctly! Google Scholar is a database that provides access to journal articles from many disciplines. The field of therapeutic recreation is fairly young and oftentimes a journal article

doesn't exist on a specific topic in the field. It is acceptable to review literature from other disciplines. In fact, the fields of psychology, sociology, music therapy, art therapy, disability studies and others have a wealth of information that is quite useful in selecting intervention techniques. Some journals require a subscription and are well worth the investment for access to up-to-date information. Most college and university libraries carry subscriptions of journals usable free of charge for faculty, students and alumni of that institution. Student interns can gather information from their school library and contribute to a research project. Public libraries often have access to databases as well, but may not subscribe to therapeutic recreation journals. Among the current recommended publications are the *Therapeutic Recreation Journal*, the *American Journal of Recreation Therapy*, *PALAESTRA*, the *Journal of Leisure Sciences*, and *Disability Studies Quarterly*, but don't limit yourself to just these!

Databases contain citations and abstracts for research reports and journal articles. There are many databases to choose from. Narrow your search by selecting the type of data you want to examine, for example, psychology versus education. Conversely, if you aren't certain your searches are producing adequate or appropriate results, try broadening the search by using a general database such as Google Scholar.

Choose from several databases for your search. Suggested databases include the following:

- Cochrane Library of Evidence-Based Medicine
- PubMed
- Ebscohost
- Psych (psycINFO)
- Education (ERIC)
- Recreation (SPORTDiscus)
- CINAHL (Cumulative Index to Nursing and Allied Health Literature)
- Google Scholar
- RT Wise Owls
- National Guidelines Clearinghouse

Writing a solid PICO question will help yield solid results. You may want to review the section on writing PICO questions. Each part of your PICO question serves as a search term:

P = Patient or Problem

I = Intervention

C = Comparison (if you want to compare to other interventions)

O = Outcome (results)

To continue our example with John from the PICO section, we want to know if John, who is a 54-year-old African American, can experience some relief from his Parkinson's tremor by using the intervention of dance, or if he would find more relief with ice skating. The PICO question is represented in the chart below.

Table 7*PICO Worksheet Example*

Patient/Participant/Problem	Intervention	Comparator	Outcome
John 54 African American Parkinson's	Dance	Ice skating	Calm tremor

Each component of the PICO is now a search term. Use caution because some terms are too broad. For example, “African American” as a search term will produce results from any study that involved or impacted African Americans. Combining your search terms with “AND” or “WITH” will limit the results; using the term “OR” will expand the search. These are called Boolean operators. Narrow your results by using Boolean operators that help sift through the data more efficiently. We recommend using your browser’s search history so you don’t get lost. The Internet is vast and layered, and it’s easy to become distracted. Did you hit a dead end? Look at the end of the article. The author will include a list of sources used to compile the original piece. You can also use the tools featured in the database for assistance. For example, Google Scholar includes a button for “related articles” that will produce other articles on a similar topic. Google Scholar also includes a “cited by” feature that allows you to find other sources that reference the one you are reading.

How to Evaluate the Research

Multiple methods are available to evaluate research. Starting with the year an article was published is a simple way to eliminate out of date items that may have been disproven. Use research conducted within the last 10 years when possible. Ten years is not a hard rule. If little research is available, use as many items as you can.

Do the articles match your population? Use research that is as closely matched as possible, when available. An intervention that works for the elderly may not be effective in small children. Be critical of the dimensions of diversity represented in the study you are reading. The more similar your population is to the population described in the literature, the more likely the treatment will apply.

How many people were involved in the study? More people involved in the study equates to generalizations that can be made from the research and applied to the population as a whole. Case studies can be interesting reads, but they only provide in-depth information on that specific client, at that one point in time. Additionally, participants in case studies should be randomly assigned to groups. Case studies that lack randomization and a control group should be used carefully. Case studies can be used in tandem with other research similar to the case to make a more compelling argument.

Look for studies that explain how people were divided. Randomized controlled studies serve as the gold standard for research. Randomization is simply the manner in

which subjects were assigned to a group in the study. Random assignment to a control or study group protects against bias or other factors that could influence the study. This technique is used to control as many outside variables as possible, thereby increasing the likelihood that the change noted in the study is due to the intervention being studied. Pay particular attention to when one group is given a placebo or no intervention. This is your control group. Studies with control groups have stronger evidence to demonstrate if the intervention changed behavior. Typically, the control group would continue to elicit the behavior while the study group demonstrates the change.

Review the results of the study. Did the participants improve or meet their goals as a result of the intervention explained in the study? Were statistical analyses conducted? Don't let the math scare you. The statistics are a quantitative method of measuring impact. Statistics help us to understand if the study was reliable, meaning it could be duplicated and get the same results. The numbers also help explain validity. Validity shows a level of confidence. Did the study measure what it intended to measure?

These concepts are important in using evidence-based practice. For example, you find a study about one person with Parkinson's that claims ice skating slowed his tremors. If you are working with a client of this diagnosis, you might want to try ice skating as an intervention. However, falling on the ice could be counterproductive to the outcome of your client's intervention, and therefore, you would want to be relatively confident that you could produce the same results before you risked your client's safety. Say, however, you found a study of 30 ice skaters with Parkinson's who were randomly assigned to two groups: one ice skating group and one control group with no intervention. This study would produce a higher level of confidence in your ability to duplicate the results with your own client than the study with just one ice skater. Finding multiple studies that show positive results produces the evidence needed to justify the practice.

Putting it All Together

After dispelling some rumors regarding research and discussing how to do Internet research, we recommend that you PRACTICE! Make notes of things that interest you, formulate PICO questions, and practice finding the answers. Read current journal articles to stay informed with the most relevant data and trends, and help the profession of therapeutic recreation by generating new questions to research interventions that will produce positive outcomes for our clients. Use the worksheet in Appendix C for research practice.

The International Classification of Functioning



For evidence-based practice to be useful, it needs to assist us in creating measurable outcomes for our clients. We need to not only evaluate the impact of our decision to use an evidence-based practice on how it impacts our individual clients, but also how it impacts our overall programming (MacDermid & Michlovitz, 2008).

Of course, outcome measurements should be valid and reliable and relevant to our clients' goals and preferences. As with all health care disciplines, demonstrating efficacy of our profession is tantamount to its survival.

Therapeutic recreation is one discipline included in rehabilitation. Rehabilitation focuses on maximizing functional movement, activity, and communication as a means of restoring meaning participation" (MacDermid & Michlovitz, 2008, p. 65). Therapeutic recreation professionals join other health care disciplines by using a common language to communicate with each other regarding their clients' functioning and progress toward measurable rehabilitation outcomes.

The World Health Organization (WHO) introduced the International Classification of Functioning (ICF) in 2001 as a classification system for understanding functioning and disability, and is conceptualized in Figure 2. This biopsychosocial model of health provides universal descriptions of health-related domains of body functions, body structures, activities and participation, and the person's interaction with the environment.

The "overall aim...[of the ICF] is to provide a unified and standardized language and framework for the description of health and health-related states" (WHO, 2001, p. 3). This framework describes the facets of human functioning that may be affected by a health condition. Health conditions that rehabilitation professionals address involve interactions among multiple factors, including the individual's body structures and functions, ability to perform activities and participate in society, environmental barriers and facilitators present, and personal factors unrelated to the health condition but that may influence function and disability. Although the ICF is a classification system, it also assists the health professional in establishing goals and objectives leading to measurable outcomes.

The ICF conceptual model can be divided into two parts. Part 1 relates to an individual's functioning and ability. It includes the domains of body functions, body structures, and activities and participation. Part 2 includes the contextual factors of the individual's environment, and his/her personal traits or characteristics as they relate to function and ability. Although personal factors are not classified, they must be considered within in the context of the client's functioning (see Figure 3).

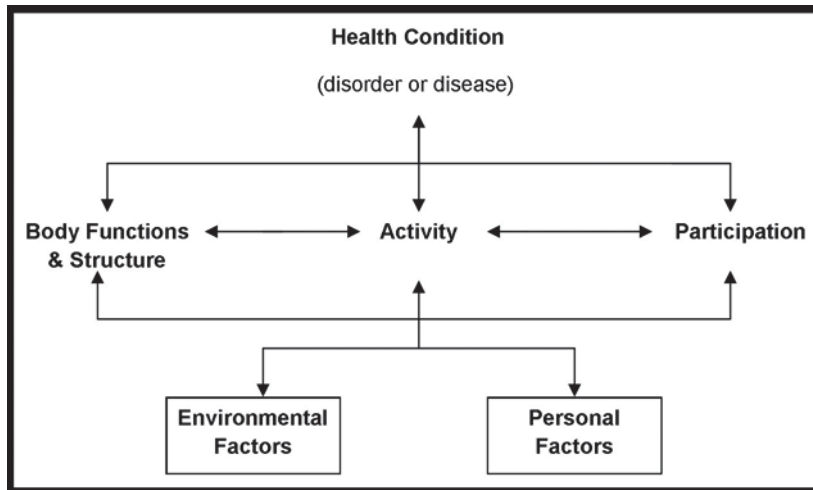


Figure 2. Conceptual Model of the ICF

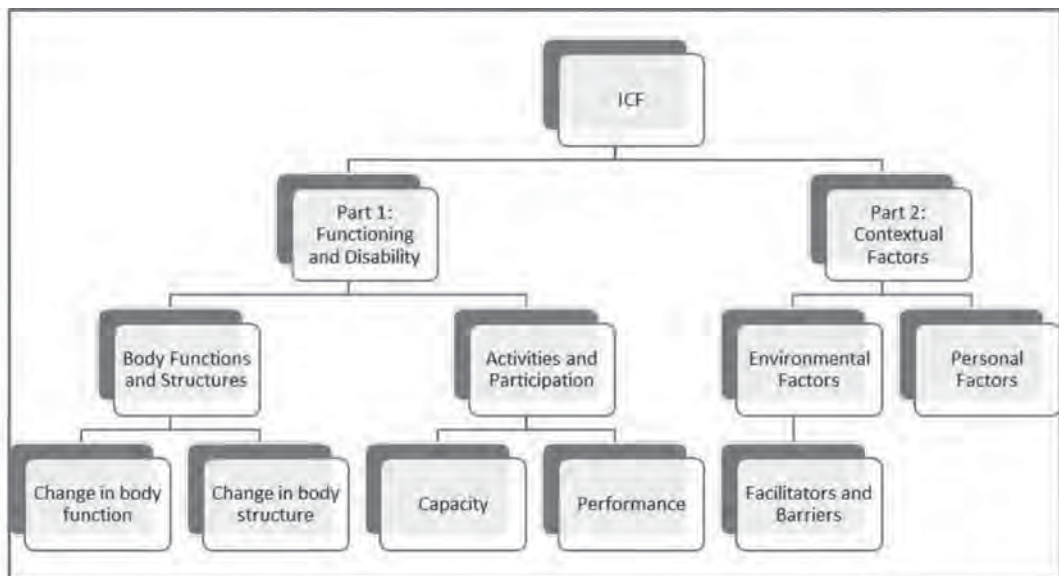


Figure 3. Structure of the ICF

Body functions are defined as physiological functions of body systems, including psychological functioning. This domain is arranged in chapters; a list is included in Table 8.

Table 8*List of Body Functions*

Chapter	Chapter Contents
1	Mental functions
2	Sensory functions and pain
3	Voice and speech functions
4	Functions of cardiovascular, hematological, immunological and respiratory systems
5	Functions of the digestive, metabolic and endocrine systems
6	Functions of the genitourinary and reproductive systems
7	Neuromusculoskeletal and movement related functions
8	Functions of the skin and related structures

Body structures are defined as anatomical parts of the body such as organs, limbs, and their components. This domain is also arranged into chapters as seen in Table 9.

Table 9*List of Body Structures*

Chapter	Chapter Components
1	Structures of the nervous system
2	Eyes, ears, and related structures
3	Structures involved in voice and speech
4	Structures of the cardiovascular, immunological, and respiratory systems
5	Structures related to the digestive, metabolic and endocrine systems
6	Structures related to the genitourinary and reproductive systems
7	Structures related to movement
8	Skin and related structures

Activities are defined as execution of a task or action by an individual in a controlled/standardized environment. A problem executing a task or action in this environment is called an activity limitation.

Participation is defined as execution of a task in an individual's typical life situation. A problem executing a task or action in this environment is called a participation restriction.

As in body structures and functions, activities and participation is arranged in chapters. Table 10 includes a list of the chapters.

Table 10*List of Activities and Participation*

Chapter	Chapter Contents
1	Learning and applied knowledge
2	General tasks and demands
3	Communication
4	Mobility
5	Self-care
6	Domestic life
7	Interpersonal interactions and relationships
8	Major life areas
9	Community, social and civic life

Environmental factors include the physical, social, and attitudinal factors that influence an individual's functioning and ability. Environmental factors are also arranged in chapters, as seen in Table 11.

Table 11*List of Environmental Factors*

Chapter	Chapter contents
1	Products and technology
2	Natural environment and human-made changes to the environment
3	Support and relationships
4	Attitudes
5	Services, systems and policies

Personal factors are considered internal influences on functioning and ability. Such factors focus on an individual's background of life and living and are not classified due to large social and cultural variations. Personal factors that may affect one's functioning and ability include factors such as age, race, gender, food preferences, individual psychological assets, fitness, lifestyle, habits, upbringing, coping styles, education, and social background.

The ICF communicates information about how a health condition interacts with a client's functioning through codes assigned by a physician. This coding system uses an alphanumeric taxonomy to specifically describe the client's health condition within the appropriate domains. These codes always begin with the letter associated with the related domain of the contextual model (see Table 12).

Table 12
Coding Letters of ICF Components

Letter	ICF Component
s	Body structures
b	Body functions
d	Activities and Participation
e	Environmental factors

Each of the letters are then followed by a number. The first number is the chapter of the lettered section. For example, the start of the code b1 indicates mental functions; b signifies body functions and 1 signifies Chapter 1, or mental functions. In addition, most of the chapters have subcategories to provide more specific information related to the related structure, function, activity and participation, and environment (see Table 13). For a complete list of codes, refer to the ICF Browser at <http://apps.who.int/classifications/icfbrowser>.

Table 13
Levels of Body Function Codes

Code	Level	Meaning
b1	First level	Mental functions
b114	Second level	Orientation functions
b1142	Third level	Orientation to person
b11420	Fourth level	Orientation to self

When the physician assigns a code to the individual, the code is written in its entirety. When the physician assigns a code of b11420, it indicates that this individual has a problem with a mental function, specifically, orientation to self. However, the code as it is written is incomplete. It does not tell us the severity of the problem. Therefore, a qualifier needs to be included with the code.

Qualifiers are ratings assigned to each code. These are recognized as essential to the meaningful use of the classification because “without qualifiers the codes have no inherent meaning” (WHO, 2001, p. 222). The three components of function, activities and participation, and environment use the same generic qualifiers (see Table 14). Generally, the greater number, the greater the impairment on body functioning, body structures, or activities and participation.

Table 14
List of Generic Qualifiers and their Meanings

Scale	Descriptors		%
0	NO problem	none, absent, negligible	0-4%
1	MILD problem	slight, low	5-24%
2	MODERATE problem	medium, fair	25-49%
3	SEVERE problem	high, extreme	50-95%
4	COMPLETE	total	96-100%
8	Not specified		
9	Not applicable		

Therefore, to communicate the severity of the problem, the code is written with a decimal point at the end. A number is then added that indicates the severity of the problem. For example, b11420 is the code assigned to the individual in the example in the preceding paragraph; writing the code with a qualifier would look like this: (b11420.2), indicating a moderate level of severity of the condition.

Note the use of “not specified” and “not applicable” in Table 14. Although these qualifiers seem superfluous, they communicate meaning. Qualifier “8” means “not specified” and is used when there is insufficient information provided to the coder. For example, the code b11420.8 tells us that the individual has a problem with an orientation to self, but the coder does not know how severe the problem is. Qualifier “9” means “not applicable” and is used when it is inappropriate to use a particular code, such as menstruation functions for a male (World Health Organization, 2013).

Qualifiers for environmental factors address barriers and facilitators to the patient’s environment. In this case, a minus sign (-) preceding the qualifier denotes a barrier, while a plus sign (+) preceding the qualifier denotes a facilitator. Table 15 provides more examples of the use of qualifiers for body functions, activities and participation, and environmental factors.

Table 15
Examples of the Use of Qualifiers

ICF Component	Code	Meaning
Body functions	b144	Memory Functions
	b1440	Short-term memory
	b1440.2	Short-term memory, moderate problem
Activities and Participation	d155	Acquiring skills
	d1550	Acquiring basic skills
	d1550.1	Acquiring basic skills, mild problem
Environmental factors	e310	Support from immediate family
	e310.4	Support from immediate family, complete problem
	e310+4	Support from immediate family, complete facilitator

Generic qualifiers for activities and participation are quantified further and address performance and capacity. Performance, the first qualifier, describes what an individual is able to do in his or her current environment using any assistance as usual. Capacity, the second qualifier, describes an individual's ability or potential to execute a task or action in a "standardized" environment: a neutral environment with controlled environmental conditions without any assistance. The difference between these two qualifiers communicates the effect of the environment on activities and participation.

In viewing the codes and their qualifiers in Table 16, it can be seen that the individual has a mild problem in acquiring basic skills in his or her lived environment with assistance as usual, but is unable to acquire basic skills in a controlled environment without assistance.

Table 16
Example of Activities and Participation Qualifiers

ICF Component	Code	Meaning
Activities and Participation	d155	Acquiring skills
	d1550	Acquiring basic skills
	d1550.1	Acquiring basic skills, mild problem in performance
	d1550.14	Acquiring basic skills, mild problem in performance, complete problem in capacity

While body functions, activities and participation, and environmental factors share the same generic qualifiers, body structures are qualified using three scales that are unique to this component.

The first set of qualifiers for body structures communicates the extent or magnitude of an individual's problem (see Table 17). The second set of qualifiers communicates the nature of the change in the respective body structure (Table 18), and the third set of qualifiers indicates the location of the problem (Table 19). As with body functions, activities and participation, and environmental factors, codes for body structures are written in their entirety, followed by a decimal point and the qualifiers.

Table 17
First Set of Qualifiers for Body Structures

Scale	Descriptors		%
0	NO problem	none, absent, negligible	0-4%
1	MILD problem	slight, low	5-24%
2	MODERATE problem	medium, fair	25-49%
3	SEVERE problem	high, extreme	50-95%
4	COMPLETE	total	96-100%
8	Not specified		
9	Not applicable		

Table 18
Second Set of Qualifiers for Body Structures

Scale	Descriptors
0	no change in structure
1	total absence
2	partial absence
3	additional part
4	aberrant dimensions
5	discontinuity
6	deviating position
7	qualitative changes in structure, including accumulation of fluid
8	not specified
9	not applicable

Table 19
Third Set of Qualifiers for Body Structures

Scale	Descriptors
0	more than one region
1	right
2	left
3	both sides
4	front
5	back
6	proximal
7	distal
8	not specified
9	not applicable

In viewing the codes and their qualifiers in Table 20, it can be seen that the individual has a severe problem in the right upper arm with discontinuity; in other words, the individual has a badly fractured humerus.

Table 20
Example of Body Structures Qualifiers

ICF Component	Code	Meaning
Body Structures	s7300	Structure of the upper arm
	s7300.3	Structure of the upper arm, severe problem
	s7300.35	Structure of the upper arm, severe problem, discontinuity
	s7300.351	Structure of the upper arm, severe problem, discontinuity, right

To summarize, the use of the ICF in clinical therapeutic recreation settings give the CTRS the ability to communicate with other health care providers using a common language. Additionally, the CTRS can use the ICF as a tool to communicate more specific information about a patient than merely a diagnosis or the name of a disease or condition. These benefits ultimately contribute to better patient outcomes and enhanced efficacy of the therapeutic recreation profession.

The ICF is also used in the Rehab-CYCLE problem-solving model. An explanation of this model follows.

Rehab-CYCLE Problem-Solving Model



Because various manifestations of the same disease present differently among those with the disease, discovering how the disease affects the individual is paramount to patient-centered care. Health care professionals have learned that to improve the health of their patients they need to understand what problems the patients perceive as being most important and involve them in making decisions regarding their health care. To do this, an “evaluation tool is needed to acknowledge the views, experience, and perspectives of all participants involved in the health care process” (Steiner et al., 2002, p. 1099).

The Rehab-CYCLE (Figure 4) is a clinical problem-solving tool created to assist health care professionals in rehabilitation management with the goal of improving “a patient’s health status and quality of life by minimizing the consequences of disease” (Steiner et al., 2002, p. 1100).

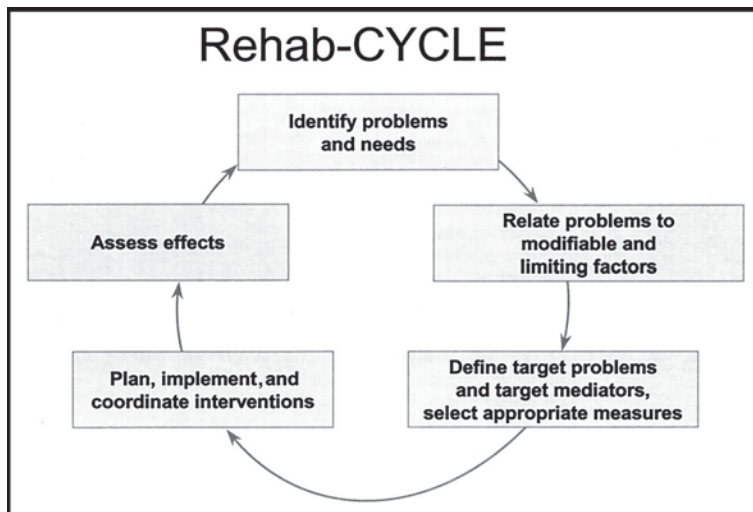


Figure 4. The Rehab-CYCLE problem-solving model (from Steiner et al., 2002).

The Rehab-CYCLE is to be implemented with the Rehabilitation Problem-Solving Form (RPS-Form). The RPS-Form “is used to identify specific and relevant target problems, discern factors that cause or contribute to these problems, and plan the most appropriate interventions” (Steiner et al., 2002, p. 1100). It is based on the conceptual model of the International Classification of Functioning, Disability and Health (ICF) using the same structured format. The RPS-Form (Appendix C) allows the application of the ICF structure to organize patient information from both the patient and the

health care professional's point of view to develop a therapeutic intervention to produce the best outcomes for the patient.

The first step in rehabilitation management is to identify a patient's problems and needs (Steiner et al., 2002), which is the first step in the Rehab-CYCLE. Information is gathered through assessments given by the physician and rehabilitation health care professionals who then report data on the RPS-Form in two ways: (1) using the patient's own words, and (2) using ICF language and codes.

After the patient's problems and needs are determined and agreed upon by the treatment team, Step 2 in the Rehab-CYCLE is to relate the patient's problem to relevant and modifiable factors. In other words, what activity limitations, participation restrictions, or personal and environmental factors may be causing or contributing to the patient's problem? Once identified, this data is entered on the RPS-Form.

Upon identification of these factors, or mediators, the third step of the Rehab-CYCLE is to define the target problems and target mediators on the RPS-Form. The target problems are those matters of greatest concern; the target mediators are activity limitations, participation restrictions, or personal and environmental factors with the "greatest potential to solve the target problem" (Steiner et al., 2002, p. 1105). Once the target problems and target mediators are identified, they are circled on the RPS-Form. Finally, lines are drawn from the target mediators to the corresponding target problems.

The fourth step in the Rehab-CYCLE is to plan, implement, and coordinate interventions. All treatment team members plan and implement their respective interventions to address the patient's health concerns.

The Rehab-CYCLE continues by prompting the treatment team to evaluate the effects of their interventions to determine whether they are effectively targeting the patient's health care goals. During treatment team meetings, intervention progress and outcomes are regularly discussed, and adjustments made when necessary. However, occasionally it may be necessary for the treatment team to re-evaluate patient progress toward his or her goals and start "a new problem-solving cycle" (Steiner et al., 2002, p. 1105).

Case Study Example

Jane Doe is a 49-year-old woman diagnosed with a L4-L5 bulging disc. Her physician referred her to you, a CTRS, to help her make necessary adaptations and modifications to continue participating in her recreational activities.

You conduct an initial assessment on Jane and learn she is in constant pain. She takes acetaminophen for the pain, but it doesn't provide much relief. The pain limits her ability to bend, lift, or sit and stand for long periods. She is also unable to perform her normal housekeeping or recreation activities. She has temporarily reduced her workload as a retail store manager by 25% to allow for healing and improvement in her symptoms.

With this information, the Rehab-CYCLE problem-solving tool can be used to create an evidence-based intervention for Jane. Step 1 is to identify Jane's problems and needs. Since you conducted her assessment, you possess the necessary information to identify Jane's problems and needs. Enter this information into the RPS-Form in the

section using the patient’s own words. For this example, a modified RPS-Form will be used (Table 21).

Table 21
Modified RPS-Form, Part 1

	Body Functions and Structure	Activities and Participation
Patient/Family perceptions of problems and disabilities	Low back pain	75% of full-time work Cannot do normal housekeeping Cannot participate in usual recreational activities Pain when bending, lifting Pain when sitting or standing for long periods
Health professional identification of mediators relevant to target problems	Moderate impairment of lumbar vertebral column s76002.3 Pain in back (b28013.3) General physical endurance (b4550.2)	Difficulty in remunerative employment (d850.2) Difficulty doing household tasks (d640.3) Difficulty participating in recreation and leisure (d9209.3)

Step 2 in the Rehab-CYCLE is to relate the patient’s problems to relevant and modifiable factors. From the CTRSs assessment, it was discovered that Jane’s ability to cope with her pain has helped her continue to function at her current level. Jane has no family to help her with the household tasks she has difficulty performing. Table 22 shows the modifiable factors that relate to Jane’s low back pain.

Table 22
Modified RPS-Form, Part 2

Personal Factors	Environmental Factors
Coping strategies (+)	Immediate family (310.3)

Step 3 in the Rehab-CYCLE is to define the patient’s target problems and target mediators on the RPS-Form. As previously mentioned, circle those problems and mediators of greatest concern and potential to be successfully remedied. Lines are then drawn from target mediators to target problems. Defined target problems and target mediators for Jane are seen in Table 23.

Table 23
Complete Modified RPS-Form, Target Problem and Target Mediators Defined

	Body Functions and Structure	Activities and Participation
Patient/Family perceptions of problems and disabilities	Low back pain	75% of full-time work Cannot do normal housekeeping Cannot participate in usual recreational activities Pain when bending, lifting Pain when sitting or standing for long periods
Health professional identification of mediators relevant to target problems	Moderate impairment of lumbar vertebral column (s76002.3) Pain in back (b28013.3) General physical endurance (b4550.2)	Difficulty in remunerative employment (d850.2) Difficulty doing household tasks (d649.3) Difficulty in participating in recreation and leisure (d9209.3)
	Personal Factors	Environmental Factors
	Coping strategies (+)	Immediate family (310.3)

Steps 4 and 5 of the Rehab-CYCLE are to plan and implement an intervention for Jane, and determine a schedule for evaluating the effects of the intervention.

It is important to remember that the CTRS is not responsible for coding problems and mediators; this is performed by the patient’s physician. Additionally, in clinical health care settings, the treatment team collaborates on completing the RPS-Form; the case presented here is intended to be a brief example and is not typical.

To summarize, the Rehab-CYCLE and the RPS-Form can be used to assist the clinical therapeutic recreation professional to identify a patient’s needs and strengths in working through the APIE process. Together with the use of the ICF, the CTRS is able to communicate with other health care providers using a common language.

Using ICF Language

The use of ICF provides a common language among health care professionals when communicating about patients in a clinical setting. It is important to understand how to use this language in both oral and written communication.

Generally, it is preferred practice to use the descriptive phrases aligned with an ICF code. In the case study example previously discussed, Jane, who has a bulging lumbar disc, was assigned the code d9209.3 by her physician. With the qualifier (.3), this code

communicates a “severe difficulty in participating in recreation and leisure.” The CTRS would use this phrase when speaking with the treatment team about Jane’s condition. The CTRS will also use this phrase when writing goals for Jane’s intervention. For example, “Jane will decrease her difficulty to participate in recreation and leisure from severe to moderate in four weeks” communicates a specific recreation therapy goal to the treatment team using the same phrase they use in their respective therapeutic specializations. In this way, the ICF provides a common language for the rehabilitation treatment team.

Ethical Considerations



Ethics is often considered the discipline dealing with what is good and bad and with moral duty and obligation. While there is some variance in what we individually deem ethical or unethical for each of us personally, as a profession we have an accord on ethical practice.

Certainly, we all agree that if a situation is illegal, then as a professional, we should not cross the legal line. Aside from the argument that not all laws are just, for the most part, professionals agree that compliance with local, state, and federal regulations is an acceptable practice.

Ethics are standards of behavior that govern our conduct in terms of right and wrong. Essentially it is how you should act or behave in performance of professional responsibilities and is connected to professional ethics. Our ethics define our character when no one is watching. This holds true in our personal lives as well as our professional lives.

The American Therapeutic Recreation Association (ATRA) has outlined a code of ethics that should guide you, as you navigate through the practice case studies in this text and the real-life cases we face as professionals.

According to ATRA's website, the "Code of Ethics is to be used as a guide for promoting and maintaining the highest standards of ethical behavior. The Code applies to all Recreational Therapy personnel" (ATRA, 2017, para. 1).

Principle 1: Beneficence

Recreational Therapy personnel shall treat persons served in an ethical manner by actively making efforts to provide for their well-being by maximizing possible benefits and relieving, lessening, or minimizing possible harm.

Principle 2: Non-Maleficence

Recreational Therapy personnel have an obligation to use their knowledge, skills, abilities, and judgment to help persons while respecting their decisions and protecting them from harm.

Principle 3: Autonomy

Recreational Therapy personnel have a duty to preserve and protect the right of each individual to make his/her own choices. Each individual is to be given the opportunity to determine his/her own course of action in accordance with a plan freely chosen. In the case of individuals who are unable to exercise autonomy with

regard to their care, recreational therapy personnel have the duty to respect the decisions of their qualified legal representative.

Principle 4: Justice

Recreational Therapy personnel are responsible for ensuring that individuals are served fairly and that there is equity in the distribution of services. Individuals should receive services without regard to race, color, creed, gender, sexual orientation, age, disease/disability, social and financial status.

Principle 5: Fidelity

Recreational Therapy personnel have an obligation, first and foremost, to be loyal, faithful, and meet commitments made to persons receiving services. In addition, Recreational Therapy personnel have a secondary obligation to colleagues, agencies, and the profession.

Principle 6: Veracity

Recreational Therapy personnel shall be truthful and honest. Deception, by being dishonest or omitting what is true, should always be avoided.

Principle 7: Informed Consent

Recreational Therapy personnel should provide services characterized by mutual respect and shared decision making. These personnel are responsible for providing each individual receiving service with information regarding the services, benefits, outcomes, length of treatment, expected activities, risk and limitations, including the professional's training and credentials. Informed consent is obtained when information needed to make a reasoned decision is provided by the professional to competent persons seeking services who then decide whether or not to accept the treatment.

Principle 8: Confidentiality & Privacy

Recreational Therapy personnel have a duty to disclose all relevant information to persons seeking services: they also have a corresponding duty not to disclose private information to third parties. If a situation arises that requires disclosure of confidential information about an individual (ie: to protect the individual's welfare or the interest of others) the professional has the responsibility to inform the individual served of the circumstances.

Principle 9: Competence

Recreational Therapy personnel have the responsibility to maintain and improve their knowledge related to the profession and demonstrate current, competent

practice to persons served. In addition, personnel have an obligation to maintain their credential.

Principle 10: Compliance with Laws and Regulations

Recreational Therapy personnel are responsible for complying with local, state, and federal laws, regulations and ATRA policies governing the profession of Recreational Therapy.