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Facilitating the Role of an Occupational Therapist as a Primary Care Provider for Clients with Rheumatoid Arthritis

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FACILITATING THE ROLE OF AN OCCUPATIONAL THERAPIST AS A
PRIMARY CARE PROVIDER FOR CLIENTS WITH RHEUMATOID ARTHITIS

by

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Masters of Occupational Therapy, University of North Dakota, 2015

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This Scholarly Project Paper, submitted by Alexis Nims and Kayli Schumacher in partial fulfillment of the requirement for the degree of Master of Occupational Therapy from the University of North Dakota, has been read by the Faculty Advisor under whom the work has been done and is hereby approved.

Signature of Faculty Advisor

Date

PERMISSION

Title: Facilitating the Role of an Occupational Therapist as a Primary Care Provider for Clients with Rheumatoid Arthritis: A Clinical Guide for Occupational Therapists

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ABSTRACT

Chronic disease management is an ever-growing need within the current population. One of those chronic diseases, arthritis, is the present leader in cause for disability among adults (Helmick et al., 2008). This incidence is expected to increase by 40% over the next 25 years. Among this population are those diagnosed with rheumatoid arthritis (RA). RA is anticipated to affect over 1.2 million Americans each year alone (Helmick et al., 2008). Incurable, RA is a debilitating condition that results in the loss of function within various occupations of daily life. The needs of this population are great, yet are often left unmet. Occupational therapists are well equipped to meet the clinical needs and support this population. Clients diagnosed with RA are seeking help largely through the use of primary care physician visits (NCHS Data Brief, 2010). The need for successful chronic disease self-management has led to the expansion of primary care services to include that of occupational therapists. As Bodenheimer and Smith (2013) explained, occupational therapists are “highly skilled professionals underused in their capacity to fill the roles generally performed by clinicians” (p. 1882). Various skills of occupational therapists such as comprehensive evaluations and the implementation of client centered holistic care equip this profession to step in, educate, and treat clients with a diagnosis of RA in a primary care setting.

This occupational therapy clinical guide has been developed as a method to bridge this gap in attempting to further communication with primary care physicians to show the value of occupational therapy and to create a partnership in treatment of clients with

to bridge this gap in attempting to further communication with primary care physicians to show the value of occupational therapy and to create a partnership in treatment of clients with chronic diseases such as RA. Additionally, this guide will direct occupational therapists working with clients with RA towards evidence-based, effective evaluation and interventions. Based on the model of Occupational Adaptation (Schkade & Schultz, 2003), this protocol will provide clinical materials for client-centered care and facilitate successful self-management strategies by all clients experiencing symptoms of RA.

CHAPTER I

INTRODUCTION

The Patient Protection and Affordable Care Act (PPACA) (2010) has brought ample changes to healthcare practice and service delivery within the United States (Lamb & Metzler, 2014). The PPACA was sanctioned with the Institute for Healthcare Improvement's Triple Aim in mind to optimize the United States health system. This overarching goal included improving client care experience, enhancing the health of vulnerable populations, and reducing healthcare costs (Phillips et al., 2013). With these outcomes in mind, healthcare professionals, including occupational therapists, must work in partnership to address the United States' healthcare adversities, particularly in the area of primary care (American Occupational Therapy Association [AOTA], 2013).

Although primary care is defined in multiple ways, Starfield (1998) described primary care as the provision of care over time, regardless of the presence of disease, and viewing the client holistically. Similarly, the Institute of Medicine (1994) and the PPACA (2010) depict primary care as accessible healthcare services provided by practitioners who are capable of addressing a wide range of client needs, as well as developing and maintaining a client-clinician partnership. Healthcare difficulties of the United States, such as increased prevalence of chronic health disease and the high demand for services for the rapidly aging population, have led to the development of primary care (AOTA, 2013).

According to the PPACA (2010) and Phillips et al. (2013), primary care expansion programs are to be implemented into the nation's healthcare system in order to augment the effectiveness of primary care, assimilate primary care into community-based settings, as well as to incorporate evidence-based research into practice. Primary care expansion programs will seek to focus on matters such as preventative medicine, health promotion and maintenance, mental and psychosocial health, and chronic disease management (PPACA, 2010).

Among the professionals working as primary care specialists are physicians in the areas of family practice or general internal medicine, nurse practitioners, and physician assistants (Agency for Healthcare Research & Quality, 2011; Lipsky & Sharp, 2006). Reasons such as an aging population resulting in an increased rate of chronic diseases have commanded the need for additional primary care providers. In fact, according to the National Ambulatory Medical Care Survey and the National Hospital Ambulatory Medical Care Survey, 664 million visits were made to primary care providers in 2008 (Center for Disease Control and Prevention [CDC]: National Center for Health Statistics [NCHS], 2010).

With this growing demand, the AOTA began to explore the role of occupational therapists as primary care providers by hosting the Forum on Interprofessional Team-Based Care in June of 2013, which was comprised of a number of healthcare professionals debating occupational therapy's role in primary care. A number of barriers to occupational therapy contributing to the primary care interprofessional team were identified. Among these included a lack of educational preparation with a more generalist focus; a lack of research providing support for the effectiveness of occupational therapy

in primary care; evolution of insurance and other reimbursement systems; and a lack of support from physicians and clients regarding the significance of occupational therapy (McKenna, 2013). In addition to these barriers, Metzler, Hartmann, and Lowenthal (2012) reported occupational therapists may feel as though they lack the training that is necessary when taking on the role as a primary care provider; and many primary physicians are currently unaware of occupational therapy's scope of practice. Conversely, Bodenheimer and Smith (2013) stated occupational therapists are "highly skilled professionals underused in their capacity to fill the roles generally performed by clinicians" (p. 1882).

Along with Bodenheimer and Smith (2013), the AOTA (2013) challenged the belief of occupational therapy's non-readiness in primary care by stating occupational therapists are highly-trained individuals in the biological, physical, social, and behavioral sciences, and are capable of providing the high quality of care the United States' healthcare system needs. Occupational therapists are advocates for clients with the aim of improving overall client health and wellness, functional capacity, and independence in occupations. With this in mind, interventions emphasize a wide range of primary care needs including health promotion and maintenance, lifestyle mediation, environmental redesign, and psychosocial aspects (AOTA, 2013).

Among those rising concerns of healthcare practitioners in the United States is the management of chronic disease (AOTA, 2013). In 2008, the CDC approximated 25 million or about 1 in 10 Americans are diagnosed with a chronic condition (CDC, 2008). Specifically, rheumatoid arthritis (RA) affects more than 1.2 million Americans each year (Helmick et al., 2008). RA is a systematic autoimmune disease characterized by

inflammation of the synovial lining located in the joints of the body (Oliver, 2009). Because there is no cure for rheumatoid arthritis, the chronic condition presents with relapsing symptomology such as tender and swollen joints, severe pain, decreased range of motion and strength, and an overall loss of function in daily activities (Oliver, 2009; Ryan, Lillie, Thwaites, & Adams, 2013).

Individuals with RA face multiple challenges with the management of their disease, which is why occupational therapists can provide the necessary assistance to manage their disease. According to Glasgow, Davis, Funnell, and Beck (2003), clients with chronic diseases need healthcare providers to provide education and support regarding self-management. Therefore, occupational therapists can provide that support to clients with RA by promoting change in thinking and behaviors related to chronic disease management and how self-management strategies can be incorporated into the roles and routines of clients.

Therefore, the purpose of this scholarly project was to develop a clinical guide for occupational therapists to utilize with clients diagnosed with RA. Because of the need for an interdisciplinary approach to chronic disease management and the need for primary care expansion services, this guide will provide occupational therapists with the appropriate education and resources to fulfill the role as an occupational therapist as part of the rheumatology care team. The guide is to be utilized with clients who have a diagnosis of RA, are over the age of 18 years old, and are clients of outpatient, primary care facilities.

Structured in congruence with the *Occupational Therapy Practice Framework*, 3rd ed. (2014), this clinical guide begins with providing an overall introduction to RA

followed by related and useful assessment tools and subsequent interventions. The chief sections to be included within the clinical guide were chosen as a result of the findings from evidence-based literature. The interventions include the following: self-management; joint protection; energy conservation; pain management; medication management; mental health; adaptive equipment; upper extremity splinting; physical agent modalities; therapeutic exercise; and surgical interventions. Specific details for each section are further described, and additional resources, handouts, and worksheets related to RA care are provided within the clinical guide.

The theoretical, occupation-based model selected to guide the scholarly project was the Occupational Adaptation (OA) model. The OA model, emphasizing the concepts of occupation and adaptation, assumes “if clients become more adaptive, they will become more functional” (Schultz, 2009, p. 463). An inability to participate and engage in meaningful occupations occurs because an individual’s ability to adapt has been challenged (Schultz, 2009). In regards to individuals with RA, related-symptoms impede the adaptation process therefore resulting in a decreased ability to participate in meaningful occupations.

The OA model also highlights the interaction between internal and external factors. The internal factor consists of the person’s desire for the mastery of occupations in the presence of pain and/or joint disease processes, while the external factor consists of the environment’s demand for mastery (Schultz, 2009). The internal and external factor, that is the person and environment, are continuously interacting with each other through the participation of daily activities thus creating an occupational challenge. As a result,

the person must then adapt in order to produce an occupational response to meet role expectations. This is known as the occupational adaptation process (Schultz, 2009).

Within the occupational adaptation process are three sub-components that are internally activated as a result to the occupational challenge (Schultz, 2009). Throughout the first phase entitled adaptive response mechanism, the individual plans the adaptive response by selection of adaption energy, modes, and behaviors that are previously learned from prior experiences. After the plan of action has been created, the individual must next configure the sensorimotor, cognitive, and psychosocial systems of the body. This process is known as adaptation gestalt. The combination of the adaptive response mechanism and adaptation gestalt results in the individual's ability to internally adapt in the response to an occupational challenge. The third and final component of the occupational adaption process includes one's evaluation of the occupational response. In this phase, the person assesses the efficiency, effectiveness, and satisfaction to self and others in regards to relative mastery (Schultz, 2009).

As stated prior, the symptoms of clients with RA hinder the adaptation process and lead to difficulties engaging in meaningful occupations. The occupational adaption process among individuals with RA is inadequate, placing significant impairment on the individual's ability to adapt. As occupational therapy practitioners, the primary goal of clients with RA is to reestablish their ability to internally adapt, self-manage symptoms, and attain relative mastery. Through this clinical guide, occupational therapists can educate clients with RA on how to self-manage their chronic disease. As a result of an interdisciplinary rheumatology team of healthcare providers, individuals can master daily occupations and resume valued roles.

The following chapters of this scholarly project are suitably arranged to guide the reader through the development of the clinical guide. To begin, Chapter II provides a synopsis of literature consisting of RA symptomology, the impact these symptoms have on occupational performance and engagement, as well as evidence-based interventions and treatment guidelines. Chapter III describes the methodology behind the scholarly project addressing the processes used throughout the development process. The product, *Occupational Therapy's Role in Primary Care for Clients with Rheumatoid Arthritis: A Clinical Guide for Occupational Therapists* makes up the content of Chapter IV. Finally, Chapter V summarizes the project's key information, implications for use, strengths, and limitations.

CHAPTER II

REVIEW OF LITERATURE

Chronic disease management in primary care is highly needed by clients within the United State healthcare system (AOTA, 2013). Based on the Center for Disease Control's (CDC) National Center for Health Statistics Data Brief (NCHS) (2010), half of all primary care appointments were made by individuals diagnosed with a chronic disease. Within that percentage, 10% were appointments regarding arthritis (CDC: NCHS Data Brief, 2010). As the present leading cause for disability among adults, arthritis diagnoses are expected to increase 40% over the next 25 years (Helmick et al., 2008). According to the 2012 National Health Interview Survey (NHIS), arthritis affected 52.5 million individuals in the United States alone, which is more than 1 out of every 5 people. The prevalence of arthritis is now considered the nation's most common cause of disability (Barbour et al., 2013). Specifically, rheumatoid arthritis (RA) is anticipated to affect over 1.2 million Americans each year (Helmick et al., 2008).

Rheumatoid Arthritis

RA is a systemic inflammatory condition primarily affecting the synovial lining of movable joints of the body (Oliver, 2009). Presenting both acutely and with relapsing symptoms, some features of this incurable condition can include tender or swollen joints, early morning stiffness, joint destruction, severe pain, and an overall loss in function in occupations of daily life (Oliver, 2009; Ryan, Lillie, Thwaites, & Adams, 2013). In order to be diagnosed with RA, clients need to present with at least four out of seven criteria

according to the American Rheumatism Association (Ottawa Panel, 2004). These criteria include morning stiffness, arthritis of three or more joints, arthritis of the hand joints, symmetric arthritis, serum rheumatoid factor, radiologic changes, or the presence of rheumatoid nodules (Ottawa Panel, 2004).

Intervention for Rheumatoid Arthritis

For clients with RA experiencing these symptoms, clinical needs and support are highly necessary. While the main goals of general therapy include decreasing pain, preventing deformities, promoting healthy participating and improving function, clients diagnosed with RA have explained that their needs are much greater (Feldman et al., 2010; Ryan et al., 2013). According to Ryan et al. (2013), a qualitative study utilizing focus groups to explore the perceptions and experiences of individuals with arthritis found that clients requested that healthcare professionals be aware of several factors. These factors are: a wide range of interventions from various clinicians are needed in order to manage pain, find meaningful consultation, have someone to confide in, and ultimately provide education regarding self-management strategies that are taught by other healthcare professionals such as occupational therapists (Ryan et al., 2013). Also in agreement, Altschuler, Margolius, Bodenheimer, and Grumbach (2012) asserted that 25% of chronic disease care can be transferred to non-physicians, such as occupational therapists, and ultimately save primary care providers 9% of their caseload time. Occupational therapists possess the knowledge and skill set to address the many needs of clients suffering from chronic disease by educating and facilitating adaptations to daily occupational disruptions.

In addition to occupational therapy providing key tools for clients in the management of chronic diseases such as RA, Dubuoloz, Vallerand, Laporte, Ashe, and Hall (2008) found through a retrospective qualitative study that those clients receiving occupational therapy services felt that they were better able to adapt and use various management strategies to better solve occupational performance issues. The caring environment that occupational therapists provided during interventions helped lead to personal changes regarding meaningful life perspectives that supported new learning (Dubuoloz, Vallerand, Laporte, Ashe, & Hall, 2008).

Helewa and Goldsmith (1991) discovered additional benefits of occupational therapy services outside of the clinic in the form of home services. In a six-week comprehensive therapy program, clients saw improvements in daily functioning in the areas of dressing, grooming, hygiene, household management, mobility, and ultimately quality of life. Individualized and comprehensive occupational therapy can additionally benefit clients with RA across several settings. Macedo, Oakley, Panayi, and Kirkham (2009) found many benefits of occupational therapy for those clients experiencing deficits in work skills, employment problems, and work disability due to increasing RA symptoms. It is estimated that one in every three clients with RA will stop working within the first few years of their disease onset (Mian & Scott, 2014). Through this particular study various occupational therapy interventions were utilized, and improvements were seen for all clients in areas of function, work productivity, quality of life, arthritis helplessness, and coping (Macedo, Oakley, Panayi, & Kirkham, 2009).

In the field of occupational therapy, much can be done through a variety of interventions within many settings for those living with RA. Overall goals for clients can

include improving psychological adjustment, enabling a larger sense of control, while increasing self-efficacy, independence, and daily functioning in every day occupations (Hammond, Young, & Kikao, 2003). Occupational therapy has been known to be extremely beneficial for clients with RA; in fact the American College of Rheumatology recently recommended the use of physical therapy and occupational therapy as an adjunct to drug treatment in published clinical guidelines (Li & Daly Iversen, 2005). In support, Hammond et al. (2003) conducted a randomized controlled trial of occupational therapy for people with early symptoms of RA. The use of self-management strategies significantly increased for clients in the experimental group compared to the control group receiving no occupational therapy services (Hammond et al., 2003). Li and Daly Iversen (2005) and Li, Davis, Lineker, Coyte, and Bomboardier (2005) found similar benefits in the form of client's physical functioning, disease specific knowledge, and client health perceptions that were received in the form of occupational therapy and cognitive behavioral therapy.

Hand exercise programs.

The facilitation of hand exercise programs is one intervention to benefit individuals with RA. Joint deformities present in the hands, a common symptom of RA, can lead to reduced hand function for activities of daily living. Ronningen and Kjekken (2008) examined the use and effectiveness of an intensive hand exercise program in comparison to a conservative exercise program. The individuals within the intensive hand exercise program saw improvements in areas of pain, disease activity, fatigue, hand strength, and joint mobility leading to increased bilateral hand function. Exercises through the intensive program that were beneficial included an increased number of

repetitions for finger flexion and extension in addition to opposition of the fingers and thumb against resistance. Other exercises included radial “finger walking”, opposition of all finger tips to the tip of the thumb, and rolling a “ball” using the palm. These were specifically shown to influence an increase in overall hand grip force. Masiero et. al (2007) determined similar results for clients when utilizing a hand exercise program coupled with an educational and behavioral joint protection program for clients with RA. Some of the exercises used within the program included shoulder, wrist, and finger flexion and extension in addition to wrist circumduction, pronation, supination, abduction of all finger joints, and shoulder elevation and circumduction. These authors found that those clients who incorporated the exercises saw improvements in self-management, self-efficacy, in addition to overall improvements in arm functioning. Scores on the Health Assessment Questionnaire (HAQ) significantly improved along with scores on the Arthritis Impact Measurement Scale-II for improved symptoms and physical functioning. Overall the experimental group that included the intensive hand exercise programming experienced significantly less pain in comparison to the control group according to the Visual Analogue Pain Scale (Masier et al., 2007).

Hand Splints.

Upper extremity splinting has also shown to be beneficial for individuals with RA, and Burtner et al. (2003) conducted a study comparing static and dynamic wrist splints. Participants benefitted most while wearing a spiral splint while showing significant improvement in finger pinch strength and dexterity with no negative impact on grip strength (Burtner et al., 2003). Static wrist splints are also a common recommendation made to individuals with RA, however research indicates mixed results

as to how beneficial they can be (Burntner et al., 2003; Pagnotta, Korner-Bitensky, Mazer, Baron, & Wood-Dauphinee, 2005). While Burtner et al. (2003) discovered no changes in grip strength while wearing a static splint as compared to wearing no splint at all, Pagnotta et al. (2005) revealed static splints only led to marginal benefits in performance of activities of daily living. This evidence suggests the prescription and fabrication of splints may be unique to each individual to best fit their occupational and functional needs.

Surgery.

While occupational therapy is a viable method for the treatment and management of RA, there are instances when surgery is an important option to consider for those who experience severe chronic pain and joint synovitis lasting more than three to six months (Chim, Reese, Toomey, & Moran, 2014). Possible surgical interventions as a treatment option for RA have the overarching goals of restoring joint function and decreasing pain. When clients are considering surgical procedures, it is important to have proper education on this topic in addition to a comprehensive outline of the most common surgical techniques, including what the recovery process looks like post-surgery. Currently, the most common surgeries are split into categories of prophylactic and therapeutic procedures. The first includes surgical procedures aimed to remove inflamed tissues, such as a synovectomy, to improve joint function and prevent future tendon rupture. The latter focuses on overall joint improvement and function, such as with joint fusions and replacements (Chim et al., 2014). Because surgery is no small decision, clients with rheumatoid arthritis should be well educated on this topic as an integral part of possible team-based interventions.

Joint protection.

As a more conservative approach, joint protection is a self-management method that aims to maintain functional performance and reduce pain and inflammation through the use of alternative body movement patterns (Masiero et al., 2007). A randomized controlled trial conducted by Masiero et al. (2007) indicated the effectiveness of a group education-behavioral joint protection program among individuals with moderate to severe RA. Because clients show difficulties with adherence to physician recommendations, the goal of the researchers was to improve participant self-efficacy of self-management strategies of RA. Results were positive in that participants receiving educational training displayed decreases in pain and enhanced physical functioning during activities of daily living and social participation (Masiero et al., 2007). Similarly, Niedermann et al. (2011) also evaluated the effectiveness of a joint-protection program; however, education was provided to participants on an individual basis, along with using the Pictorial Representation of Illness and Self Measure (PRISM). With the use of this visual aid, the researchers assessed the perceived burden of RA, and it also aided in setting appropriate and personal joint protection-related goals related to meaningful occupations of the participants. Niedermann et al. (2011) found that although those receiving PRISM joint protection education indicated decreases in pain and increased adherence of joint protection methods and self-efficacy, participants' perceived burden of illness did not decrease throughout the course of the PRISM program. This may indicate that occupational therapy interventions may not have a direct influence on reducing already ingrained perceptions of the impact of RA (Niedermann et al., 2011).

Pain management.

According to Gong, Li, Li, and Mao (2013), the presence of pain for those diagnosed with arthritis is one of the most debilitating symptoms, however it is also one of the most poorly controlled. Physicians are reporting additional problems correctly assessing the pain of patients, as most methods utilized in the clinic are of subjective nature, such as the verbal pain rating scale and the verbal analogue scale. In comparison to osteoarthritis (OA), clients with RA reported significantly more pain sites such as pain present in bilateral knees, knuckles, shoulders, and wrists. Fifty-three percent of clients with RA reported moderate to severe pain while 45 % reported the same type of pain that related to interference with daily activities (Gong et al., 2013). The current pain self-management strategies recommended by rheumatologists are focused on the use of pharmacological methods. Some methods used beyond medication included rest, activity pacing, heat or cold, hot baths, distraction, exercise, controlling stress, massage, and the use of joint protection strategies. It is very important for clients experiencing pain from symptoms of RA to realize and seek out viable options beyond the use of medications to help with daily pain relief. Of the sample of 197 participants in this study diagnosed with either RA or OA, pain self-management strategies were only used by a little over 20% of participants. Of those that reported they used these strategies, they were done so infrequently (Gong et al., 2013). Occupational therapists are educated well to step into this role and educate clients on the different strategies that can be used for daily pain management.

Adaptive equipment.

Along with joint protection, other compensatory strategies such as the use of adaptive equipment can enhance occupational functioning among individuals with RA (Eckloff & Thornton, 2002). Common functional impairments secondary to pain, limited range of motion, and fatigue can lead to one's decreased ability to perform life's roles and the tasks and activities associated with those roles. In order to address these limitations, adaptive equipment and devices can be recommended by occupational therapists because of their knowledge and training of both disease implications of RA and adaptive equipment and technologies. Adaptive equipment can address areas such as mobility, dressing, toileting, grooming, food preparation, and writing. There are numerous devices that assist individuals within these areas of daily living and include, but are not limited to grab bars, large and extended-handled utensils, carts and other equipment on wheels, and rests and stabilizers. Through the use of these devices individuals diagnosed with RA can maximize their independence, self-efficacy, and decrease dependence on others and feelings of helplessness (Eckloff & Thornton, 2002).

Physical agent modalities.

The use of physical agent modalities (PAMs) has been shown to be effective as a "conservative" treatment method for the management of RA (Anain, Bojrab, & Rhinehard, 2010; Ottawa Panel, 2004). The most commonly used PAMs that have shown to improve various symptoms of RA include thermotherapy, ultrasound, electrotherapy, low level laser therapy (LLLT), and hydrotherapy. Thermotherapy, especially in the form of paraffin wax baths, has had clinically significant results as an adjunct to exercise for improvements in pain, stiffness, and joint range of motion. Ultrasound, which allows for

the application of a deeper heat to extremity tissues, has been shown to reduce muscle spasms, decrease inflammation, stimulate blood flow, and decrease painful and tender joints while improving overall function. Electrotherapy is also commonly used for pain control and to increase muscle strength and function. Positive results for RA have been found in the use of transcutaneous electrical nerve stimulation (TENS). Low frequency TENS has had clinically relevant results in the improvement of overall joint pain, stiffness, and tenderness. LLLT has also been shown to relieve pain and to improve function in clients with RA. Finally, the use of hydrotherapy has evidence proving its efficacy in the use of pain reduction in addition to improvements for clients for health related quality of life factors (Anain et al., 2010; Ottawa Panel, 2004).

Energy conservation.

Another commonly forgotten symptom of RA, fatigue, can be addressed by occupational therapists through education and client use and adherence of energy conservation techniques. Dreiling (2009) expressed that fatigue can directly impact one's ability to perform daily occupations and may lead to decreased independence and quality of life. Energy conservation is defined as the management of fatigue through the simplification of daily tasks such as self-care, work, and leisurely activities. Dreiling (2009) emphasized the importance of planning and prioritizing activities that need to be accomplished, as well as finding a balance between activity and rest, and organizing home and work environments to prevent excessive energy expenditure. Although Dreiling (2009) thoroughly explained what individuals can do in order to manage their fatigue, little research has been conducted to determine the effectiveness of energy conservation techniques with the RA population. However, Furst, Gerber, Smith, Fisher,

and Shulman (1987) conducted a randomized study to evaluate and compare the results of energy conservation techniques following the PRECEDE model versus traditional education methods directed by occupational therapists. Furst et al. (1987) concluded that although individuals' utilization of energy conservation strategies through the PRECEDE education model improved, there were no significant differences between the two groups. The lack of literature regarding energy conservation for individuals diagnosed with RA indicates a need for more research in this area in order to determine the most appropriate teaching techniques that ultimately result in adherence.

Medication management.

The use of medications and medication management is a common practice for those individuals diagnosed with RA. With so many drugs on the market, it can become overwhelming for clients to educate themselves on possible medications and their side effects. Higher rates of medication adherence have been associated with those patients that were receiving proper medication and client education from various health care professionals (Elliot, 2008). It is important that as an adjunct to self-management strategies for RA, clients understand the benefits and side effects of common medications used, such as non-steroidal anti-inflammatory drugs (NSAIDs), disease-modifying antirheumatic drugs (DMARDs), and corticosteroids. Elliot (2008) found that client adherence to common rheumatic medications varied between 16% to 84%, with non-adherence relating to several factors such as client preference, current health conditions, level of social support, psychological functioning, the use of various health systems, and socioeconomic status. Of the possible 84% adhering to medication regimes, only 37% of those clients are well-informed regarding side effects of their current medications. It is

important to note that positive client–provider relationships have been correlated with higher medication adherence (Elliot, 2008). The client-centered nature of occupational therapy is well prepared to educate clients on the importance of medication adherence and establishing effective routines in a variety of settings.

Psychosocial impact.

Physical symptomology associated with RA can lead to psychosocial impairments and ultimately a decreased quality of life. Fatigue, pain, and joint stiffness were studied by Franklin and Harrell (2013). Physical symptoms which impact psychological outcomes include depression, perceived health impairment, and satisfaction with abilities. Among the 200 older adults with self-reported RA, half reported having some difficulty, much difficulty, or an inability to perform tasks. Participants also reported their disability mildly or moderately impacted their overall perceived health, and over 50% of the sample was not satisfied with their ability to fully engage in activities of daily living. Franklin and Harrell (2013) concluded there was a significant relationship between the physical and psychological symptoms of RA. In addition, Englbrecht et al. (2012) studied the impact of coping strategies on mental well-being. The researchers identified four coping strategies used by individuals with RA: distancing, cognitive reframing, active problem-solving, and emotional expression. They concluded one's perceived ability to cope effectively was positively related to enhanced general health perception and emotional well-being. These two studies identify a need for psychosocial intervention among individuals with RA, and occupational therapists can collaborate with individuals to address their mental health needs to enhance quality of life.

Leisure.

Psychosocial symptoms, such as depression, decreased self-efficacy, and helplessness can impact individuals' participation in leisure occupations. Occupational therapy is unique in its ability to assess all areas of an individual's occupational participation, including some other aspects of daily living that may be affected by RA, such as leisure. Reinseth et al. (2011) studied leisure-time physical activities (LTPA) and how RA can negatively affect female's abilities to feel self-confident while engaging in these activities. These authors found that maintaining an active lifestyle is important in the management of RA, and those who were regularly active reported lower joint pain, fatigue, and ultimately quality of life (Reinseth et al., 2011).

Occupational Therapy's Role with RA

While the benefits of occupational therapy have been shown, there are still perceived needs of clients that are not being met, and access to quality therapy has been a problem. In general, the health care reform has led to the unmet healthcare needs of individuals across the country due to variables like increased costs, low satisfaction with visits, and increased waiting times (Freed, Hansberry, & Arrieta, 2013). In a study by Feldman et al. (2010), 32.2% of clients with arthritis felt they needed therapy, yet only 58.3% were actually able to receive services. Further, clients in this study were not receiving proper services due to a lack of referrals to occupational therapy, had lower socioeconomic status, longer disease duration, or lower insurance status. Surprisingly, these authors also found that family physicians had a tendency to not refer clients with RA to rehabilitation, but were willing to do so with OA (Feldman et al., 2010). In an effort to document the lack of occupational therapy access, Delaurier, Bernatsky,

Raymond, and Feldman (2013) studied the wait times for therapy from the time of initial physician referral. These authors identified that 13% of referral calls resulted in an appointment within 6 months, 13% within 6-12 months, 24% over 12 months, and 22% of calls for therapy were refused (Delaurier et al., 2013). However, while clients expressed the need for occupational therapy, depending on the setting or willingness of a physician to refer, these needs are not being met. Longer wait times for therapy are detrimental to clients, as RA can be a progressive condition resulting in decreased life expectancy if left untreated (Oliver, 2009).

Occupational therapists as primary care specialists can meet the needs of clients with RA in a timely manner by providing services within the direct access context. While the role of occupational therapy in primary care is still emerging, clients with RA are currently not receiving the necessary rehabilitative healthcare to meet their needs. Freed et al. (2013) stated that because clients have identified difficulties to initiate and follow through with at-home healthcare plans for the management of their chronic disease, occupational therapists can be the bridge in helping clients fulfill those responsibilities. Chronic disease management requires changes in daily routine, which clients struggle with. In collaboration with the client, occupational therapists can aid in identifying those barriers to chronic disease management through the development of individualized plans of care that provide solutions for healthy routines and coincide with physician recommendations.

As stated in the literature, clients receiving occupational therapy services have been linked to improved functional and occupational outcomes. According to Hammond (2004), occupational therapy's role in rheumatology was thoroughly explained. Because

RA is a disabling disease, individuals experience occupational interferences and limitations that highly impact one's life roles at home, work, leisurely, and socially. These lifestyle disturbances can be evaluated by an occupational therapist who can then provide effective education and self-management strategies in order to regain occupational balance in their lives. Occupational therapy interventions focus on maintaining functional mobility and reducing pain. Other interventions include topics such as joint protection, energy conservation, hand splinting and surgical repair, adaptive equipment, at-home exercise programming, medication management, physical agent modalities, and psychosocial aspects (Hammond, 2004). By taking on the role as a primary care provider for individuals diagnosed with chronic diseases like RA, occupational therapists can collaborate to provide increased access to quality healthcare in order to meet clients' occupational needs.

Based on the literature, there is a need for primary care services in the area of chronic disease management and an emerging role for occupational therapists. Chapter III will describe the process of the development of the product, along with a description of how the relevant information was gathered and applied. The chapter will also provide an overview of the product in relationship to the literature and its application to an occupation-based model.

CHAPTER III

METHODOLOGY

The purpose of this scholarly project was to develop a clinical guide for occupational therapy practitioners to utilize with clients diagnosed with rheumatoid arthritis (RA). Because the complex needs of clients with RA are not thoroughly addressed by rheumatologists and other primary care providers, occupational therapists can target the unmet occupational needs of clients while expanding primary care service delivery (Oliver, 2009). Through the use of this guide, occupational therapists in collaboration with rheumatologists can provide client-centered and evidence-based therapy that enhances client satisfaction and independent engagement in meaningful occupations.

The clinical guide was developed to not only provide guidance to occupational therapy practitioners, but to also advocate for and expand the role of occupational therapy within primary care. As a new emerging area of practice, this guide acts as an educational resource for occupational therapists. This clinical guide highlights the depth of treatment occupational therapists can provide by emphasizing function and meaningful occupation. Because of the complexities of primary care, a collaborative effort among occupational therapists, primary care physicians, rheumatologists, and other interdisciplinary team members can fully address the needs of clients with RA while acknowledging the demands of the healthcare reform. This teamwork will not only keep healthcare costs low, but also improve the quality of coordinated treatment.

The clinical guide was determined to be used with individuals over the age of 18 years old who have a diagnosis of RA. Individuals younger than 18 were not included in the target population as children with an early onset of arthritis receive a differing diagnosis known as juvenile arthritis. Osteoarthritis and other rheumatologic conditions were excluded from the target population in order to narrow the focus of care to best meet the needs of clients. Differences in pathology, signs and symptoms, goals of therapy, and treatment regimens among these rheumatic diseases were also influential factors of exclusion of other rheumatic diseases from the target population.

The need for this product was determined by conducting a thorough review of literature in relationship to the medical and occupational therapy evidence regarding therapeutic assessment and interventions of individuals with RA and primary care. Its purpose was to gather information to support the development of the guide and promote evidence-based practice. Research was conducted through the University of North Dakota's Harley E. French Library. Scholarly databases such as CINAHL, PubMed, and OT Search were utilized to find relevant research for the development of this scholarly project. Articles were deemed relevant for use of the scholarly project through factors such as, but were not limited to: the inclusion and exclusion criteria of the target population, current occupational therapy-related assessment and interventions, and other relevant forms of healthcare interventions applicable to the RA population. Critiques of twenty qualitative and quantitative articles were written in order to identify common themes in relationship to RA care. The synopses consisted of an analysis of the level of evidence, strengths and weaknesses of the article, and its applicability to the scholarly project. Rheumatology and occupational therapy textbooks were also reviewed and

relevant information from these resources was also included in the development of the clinical guide.

The literature review and subsequent critiques led to several emerging themes related to RA treatment. The identified themes focused on concepts such as rheumatoid arthritis etiology, pathology, and related signs and symptoms. A variety of treatment areas provided by both occupational therapists and other healthcare professionals was also found regarding topics such as joint protection, energy conservation, adaptive equipment, medication management, hand splinting and exercise, and physical agent modalities. Among these interventions, the concepts of self-management and chronic disease management were significant and often a component of client education. A number of authors explored physical symptomology and its impact on factors such as self-efficacy, quality of life, perceived health, and pain.

In addition to the review of literature, the occupation-based model of Occupational Adaptation (OA) was selected to guide the development of the product (Schkade & Schultz, 2003). Concepts are evident throughout the product, and thoroughly emphasize OA ideals through facilitation of the client's internal adaptation process of chronic disease self-management and relative mastery of desired occupations. The OA model was chosen because many individuals with chronic disease are unable to appropriately and efficiently respond to the surrounding demanding environment when engaging in occupations despite their desire to master functional challenges. However, many of these functional challenges are not being met, and occupational therapists can promote relative mastery in clients with RA by addressing their physical, cognitive, and psychosocial needs (Schkade & Schultz, 2003).

References to the literature were made to develop the clinical guide in congruence with the *Occupational Therapy Practice Framework*, 3rd ed. (2014). Details referring to the therapeutic process were created based on supporting evidence in relationship to RA care. As a result, a comprehensive list of assessments was developed, along with the inclusion of the Relative Mastery Measurement Scale, the specific evaluation tool correlating with the OA model (George, Schkade, & Ishee, 2004). In relation to RA interventions, evidence from multiple peer-reviewed articles and textbooks led to the development of the clinical guide, which will be discussed in more detail in Chapter IV.

Through a collaborative process of the authors, the methodology consisted of determining a need and defining a purpose, reviewing and analyzing literature, and integrating an occupation-based theoretical model to form a clinical guide for occupational therapists in primary care. Chapter IV provides more specific information related to the utilization of the clinical guide. Specifically, objectives, target population, setting, and recommendations for implementation will be addressed.

CHAPTER IV

PRODUCT

As highlighted in the literature, the United States' healthcare reform demands expansion of primary care services, as well as increased quality care for rheumatic disease, as arthritis is considered to be the nation's number one cause for disability (Barbour et al., 2013; Oliver, 2009; Patient Protection and Affordable Care Act, 2010; Phillips et al., 2013). This scholarly project was developed for the purpose of guiding occupational therapists through the evaluation, intervention planning and implementation, and discharge processes with clients diagnosed with rheumatoid arthritis (RA) while addressing the nation's healthcare concerns. Because of the complexities in RA care, a collaborative effort is warranted in order to best meet the needs of clients. Partnership with rheumatologists and other primary care providers can expand treatment for individuals diagnosed with RA by addressing the functional and occupational aspects of the client.

To address the need for primary care service expansion and increased quality and access to rheumatologic care, this clinical guide asserts that occupational therapists are qualified providers to meet those needs. Occupational therapists as primary care providers can provide evidence-based treatment for individuals with RA while collaborating with primary care providers. In fact, according to Metzler, Hartmann, and Lowenthal (2012), primary health values a teamwork of interprofessionals that will promote improved health, wellness, and access to healthcare while effectively utilizing

resources. This clinical guide and its supporting literature propose that occupational therapists can provide the appropriate care to clients with RA.

The clinical guide is intended to be operated by occupational therapy practitioners within primary care in collaboration with rheumatologists or other primary care providers. The collaboration component through a team of primary care healthcare professionals is emphasized to enhance the degree of communication with these providers in order to best meet the needs of the client. It is to be utilized in primary care outpatient facilities with individuals diagnosed with RA who are over the age of 18. The product's purpose is to provide occupational therapists guidance through the occupational therapy process with rheumatic care, while also acting as an advocacy tool to promote occupational therapy's role in primary care and chronic disease management.

Selected to guide the product of the scholarly project, the Occupational Adaptation (OA) model was chosen to provide structure to the content of the clinical guide (Schkade & Schultz, 2003). The OA model is also emphasized and recommended to be utilized by the occupational therapists in primary care to guide therapy with clients diagnosed with RA. Although clients with chronic diseases like RA are prescribed medications to control symptoms, they often lack the self-management skills needed to take control of their occupational wellness. Parallel to the beliefs of the OA model, individuals are unable to appropriately and efficiently respond to their person system changes and concurrently to the surrounding demanding environment when engaging in occupations despite their desire to master functional challenges (Schkade & Schultz, 2003). In the case of clients with RA, the client may choose a specific adaptive response to master a desired task, but because of RA-related symptoms, clients are unable to do so.

For example, secondary to pain and limited range of motion, a client may be unable to don or doff a shirt and is therefore unable to master the task of dressing. However, primary care occupational therapists can enhance client adaptation response by addressing the client's physical, cognitive, and psychosocial functioning (Schkade & Schultz, 2003). Ultimately, the OA model will promote self-management skill adaptation, relative mastery in meaningful occupations, and enhanced quality of life.

Through the use of the concepts of the OA model, occupational therapists can effectively meet the functional needs of clients with RA through the utilization of the provided clinical guide. Strategically structured in congruence with the *Occupational Therapy Practice Framework*, 3rd ed. (2014), the product is organized into the following subsections: background information related to RA assessment and evaluations; self-management; joint protection; energy conservation; pain management; medication management; mental health; adaptive equipment; upper extremity splinting; physical agent modalities; therapeutic exercise; and surgical interventions. The order of the subsections was determined by the authors based on the perceived significance of the interventions and may potentially act as a useful layout for occupational therapists in primary care to follow with clients with RA. However, it is important to note the layout of the clinical guide may not be appropriate for all clients and should therefore be adapted to best meet their needs.

Within these subsections are three client worksheets that can be utilized during intervention sessions. The worksheets are based on the intervention topics of self-management, pain management, and medication management. A comprehensive evaluation form to be utilized by occupational therapists is also provided under the

evaluation and assessment subsection. The client worksheets and occupational therapist evaluation form may be reproduced; however, it is crucial to keep in mind that the created handouts should be adapted to best meet the needs of the clients. Occupational therapists are therefore granted permission to modify the handouts provided in the clinical guide. In addition, parallel with the client-centered ideal, information may be utilized in the development of home programming for the client, but should be individualized to best meet the client's ability to adapt and generalize these concepts within their home and community.

The clinical guide also possesses two appendices in regards to the topics of joint protection and upper extremity exercise. These handouts are meant for use by the occupational therapist only, and cannot be duplicated due to copyright law. The handouts were originally developed by Visual Health Information (VHI), a software program purchased by the University of North Dakota Department of Occupational Therapy. Permission to include these handouts in the clinical guide was granted to the authors by VHI.

The product is presented in the following pages. The authors fully intend that occupational therapists will utilize this clinical guide of rheumatic care in collaboration with rheumatologists in the hope of expanding and advocating occupation therapy's role in primary care.

The Role of
Occupational
Therapy in
Primary Care for
Clients with
Rheumatoid
Arthritis

A Clinical Guide for
Occupational Therapists

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Kayli Schumacher, MOTS
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Introduction

Rheumatoid Arthritis Occupational Therapy in Primary Care

This clinical guide is meant to provide occupational therapy practitioners with the tools and resources to thoroughly address the occupational needs of individuals with rheumatoid arthritis. The guide was created as a result of the need for the expansion of primary care services in the United States while advocating and promoting occupational therapy's role in primary care. Because occupational therapists are highly trained and capable of providing quality care for clients with chronic diseases such as rheumatoid arthritis, the clinical guide will provide comprehensive evaluation and intervention ideas to aid clients with the self-management of their disease. Through an interprofessional collaboration with rheumatologists, occupational therapists as primary care providers can enhance the treatment of individuals with rheumatoid arthritis.

The guide begins by introducing the topic of rheumatoid arthritis and providing a comprehensive overview of the evaluation process. It includes a table of possible assessments to utilize with clients with rheumatoid arthritis, as well as several evidence-based interventions. Worksheets have been included and are available for replication and distribution to clients.

Rheumatoid Arthritis

Rheumatoid Arthritis Occupational Therapy in Primary Care

Rheumatoid arthritis (RA) is a chronic inflammatory disorder in which the immune system attacks the body's joints instead of attacking things such as bacteria and viruses. This is also known as an autoimmune disorder. Inflammation occurs due to the abnormal immune response and can cause damage to various joints and organs. Typically the joints affected are the smaller ones of the hands and feet. If a joint on one side of the body is affected, the same one on the other side is commonly affected as well. Unlike osteoarthritis, RA affects the lining of the joints, known as the synovium, resulting in swelling that can be very painful. This swelling thickens the synovium and can eventually destroy joint cartilage in addition to tendons and ligaments holding the joint together. If it progresses the disease can result in bone erosion and joint deformities, causing the joint to lose its shape and proper alignment.

Symptoms can vary from person to person, and can even manifest themselves differently from day to day. Common symptoms include pain, swelling, stiffness, fatigue, feeling ill, firm bumps of tissue under the skin known as rheumatoid nodules, weight loss, and fever.

Rheumatoid Arthritis References:

- Arthritis Foundation. (2014). What you need to know about rheumatoid arthritis. Retrieved from <http://www.arthritis.org/tools-and-resources/expert-q-and-a/rheumatoid-arthritis-questions/flare-last.php>
- Mayo Foundation for Medical Education and Research. (2014). Diseases and conditions: Rheumatoid arthritis. Retrieved from <http://www.mayoclinic.org/diseases-conditions/rheumatoid-arthritis/basics/definition/con-20014868>
- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS). (2009). What is Rheumatoid arthritis? Fast facts: An easy-to-read series of publications for the public. Retrieved from http://www.niams.nih.gov/Health_Info/Rheumatoid_Disease/rheumatoid_arthritis_ff.pdf

Causes of Rheumatoid Arthritis

The exact cause of RA is unknown. Research has led physicians to realize that a genetic component is likely the cause. While genes aren't responsible directly, they can make individuals more susceptible to getting the disease through exposure to different environmental factors such as infections caused by certain viruses and bacteria that may trigger the disease. In addition to a genetic component, it is believed that hormones and environmental factors may play a role as well.

Duration of Disease

Disease duration is variable depending in each individual. Some experience RA for only a few months to a year or two. In these cases the disease may go away without causing any permanent deformities or damage. Commonly individuals will experience symptom flare-ups that can last several days and then they will experience periods that are symptom free, known as remission. Flare-ups are categorized by increased morning joint stiffness that takes more time dissipate throughout the day. Sometimes stiffness can last all day and individuals experience a greater level of fatigue. It is important for individuals to learn the symptoms of a flare up to be proactive with treatment, to lessen the damage that increased inflammation may cause to joints.

A small percentage of those diagnosed have a severe form that can last for several years or even a lifetime. It is this version of RA that results in major joint and bodily damage.

Prevalence

Currently, about 1.5 million people in the U.S. are diagnosed with rheumatoid arthritis. While anyone can be susceptible to the disease, it commonly affects women three times more often than men. For women, symptoms manifest between the ages of 30 and 60. In men, a diagnosis usually happens later in life. As you age the chances of having RA increase significantly. A very small percentage of children and young adults are also diagnosed each year.

Diagnosis

Besides recognizing common symptoms associated with RA, the body presents with certain signals to help physicians make a diagnosis. People with rheumatoid arthritis tend to have an elevated erythrocyte sedimentation rate (ESR), which indicates that a process of inflammation is occurring in the body. Other available blood tests look for rheumatoid factor and anti-cyclic citrullinated peptide (anti-CCP) antibodies. Other individuals experience symptoms of anemia, a low red blood cell count.

Treatment

There is currently no cure for RA, but there are a number of medications available to help decrease symptoms, reduce inflammation, and slow the disease progression. There are several medications currently available, and no one drug works for everyone but some can find certain ones or a combination that may be beneficial over another. Control of RA is more successful when medications are combined with self-management strategies such as joint protection, energy conservation, exercise, and many others. Overall goals of treatment are to be in remission, which is a state when bodily inflammation is gone or is very low.

Rheumatoid Arthritis Information

There are several outlets available to find more information regarding rheumatoid arthritis, some of which are outlined below:

- National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)
 - www.niams.nih.gov
- Mayo Clinic
 - www.mayoclinic.org
- The Arthritis Foundation
 - <http://www.arthritis.org>
- The American College of Rheumatology
 - <http://www.rheumatology.org>

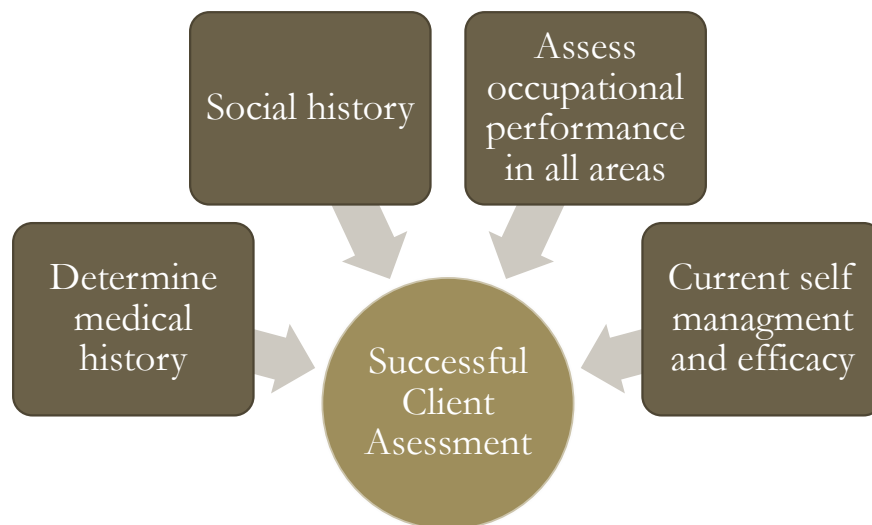
Evaluations and Assessment

Rheumatoid Arthritis Occupational Therapy in Primary Care

Occupational therapists must identify the current client's priorities and needs for treatment in management of rheumatoid arthritis. This disease can be extremely dynamic in its presentation, therefore searching for how rheumatoid arthritis specifically affects each client is very important in maintaining client-centered therapy. Assessments are an effective way to track the therapy process by obtaining a baseline, measuring progress, in addition to using them as outcome measures. To aid occupational therapists in obtaining a comprehensive occupational profile and evaluation, Worksheet 1 is provided.

Table 7 has also been provided containing a variety of assessment tools that occupational therapists can use to further create a comprehensive evaluation of their client. Assessments can aid in measuring performance related to specific areas, such as the ability to work and upper extremity movement. Each is highlighted with the assessment purpose, appropriate indications for their use, and resources for additional information and research.

Figure 1: Components of successful assessment of clients.



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Client Evaluation & Occupational Profile Worksheet 1

Rheumatoid Arthritis Occupational Therapy in Primary Care

Client: _____ Date: _____

Referral: _____

Communicating Physician: _____

Medical History: _____

Relevant Client History (i.e., work, education, leisure): _____

Disease Information

Date of RA onset: _____

Current Symptomology: _____

Client is currently managing symptoms by: _____

Current Medications: _____

Client's Current Level of Disease Self-Management (Scale 1-10): _____

Client's Present Concerns: _____

Areas of Occupation

Problems/concerns in the areas of:

ADLs: _____

IADLs: _____

Social Participation: _____

Education/Work: _____

Leisure: _____

Sleep: _____

Relative Mastery Measurement Scale (RMMS) Score: _____

RMMS Comments/Concerns: _____

Environment

Current living situation: _____

Supports available: _____

Problems/Concerns with home environment: _____

Current Adaptive Equipment being used: _____

Other problematic environments (i.e., work): _____

Physical Evaluation

Current pain level (Scale 1-10): _____

Pain level at its best: _____ due to _____

Pain level at its worst: _____ due to _____

Area(s) of pain: _____

Pain can be described as: _____

Current pain management strategies: _____

Shoulder Evaluation

Range of Motion (Table 1):

Active Range of Motion (AROM)	Right	Left	PROM	Right	Left
Extension			Extension		
Flexion			Flexion		
Abduction			Abduction		
Adduction			Adduction		
Internal Rotation			Internal Rotation		
External Rotation			External Rotation		
Horizontal Abduction			Horizontal Abduction		
Horizontal Adduction			Horizontal Adduction		

Manual Muscle Tests (Table 2):

Manual Muscle Test	Right	Left	Muscle	Palpation
Scapular Adduction & Lateral Rotation	/5	/5	Serratus Anterior	
Scapular Elevation	/5	/5	Upper fibers of Trapezius	
Scapular Adduction	/5	/5	Middle fibers of Trapezius	
Scapular Adduction & Medial Rotation	/5	/5	Rhomboids	
Scapular Depression & Adduction	/5	/5	Lower fibers of Trapezius	
Shoulder Flexion to 90	/5	/5	Anterior fibers of Deltoid	
Shoulder Extension	/5	/5	Latissimus Dorsi & Teres Major	
Shoulder Abduction to 90	/5	/5	Middle fibers of Deltoid	
Shoulder Horizontal Adduction	/5	/5	Pectoralis Major	
Shoulder Horizontal Abduction	/5	/5	Posterior fibers of Deltoid	
Shoulder Internal Rotation	/5	/5	Subscapularis	-
Shoulder External Rotation	/5	/5	Infraspinatus	

Shoulder Observations: _____

Elbow Evaluation

Range of Motion (Table 3):

AROM	Right	Left	PROM	Right	Left
Extension			Extension		
Flexion			Flexion		
Supination			Supination		
Pronation			Pronation		

Manual Muscle Tests (Table 4):

MMT	Right	Left	Muscle	Palpation
Elbow Flexion	/5	/5	Biceps Brachii	
Elbow Flexion	/5	/5	Brachialis	
Elbow Flexion	/5	/5	Brachioradialis	
Elbow Extension	/5	/5	Triceps Brachii	
Supination	/5	/5	Supinator & Biceps Brachii	
Pronation	/5	/5	Pronator Teres & Pronator Quadratus	

Elbow Observations: _____

Hand/Wrist Evaluation

Range of Motion (Table 5):

AROM	Right	Left	PROM	Right	Left
Wrist			Wrist		
Flexion			Flexion		
Ulnar Deviation			Ulnar Deviation		
Radial Deviation			Radial Deviation		
Finger			Finger		
MCP Flexion			MCP Flexion		
MCP Extension			MCP Extension		
MP Abduction			MP Abduction		
MP Adduction			MP Adduction		
PIP Extension			PIP Extension		
DIP Extension			DIP Extension		
Thumb			Thumb		
CMC Flexion			CMC Flexion		

CMC Extension			CMC Extension		
Thumb Opposition			Thumb Opposition		
CMC Abduction			CMC Abduction		
MP Extension			MP Extension		
MP Flexion			MP Flexion		
IP Extension			IP Extension		
IP Flexion			IP Flexion		

Manual Muscle Tests (Table 6):

MMT	Right	Left	Muscle	Palpation
Wrist Flexion & Radial Deviation	/5	/5	Flexor Carpi Radialis	
Wrist Flexion & Ulnar Deviation	/5	/5	Flexor Carpi Ulnaris	
Wrist Flexion	/5	/5	Flexor Carpi Radialis & Ulnaris	
Wrist Extension & Radial Deviation	/5	/5	Extensor Carpi Radialis Longus & Brevis	

Wrist Extension & Ulnar Deviation	/5	/5	Extensor Carpi Ulnaris	
Wrist Extension	/5	/5	Extensor Carpi Radialis Longus & Brevis and Extensor Carpi Ulnaris	
MP Extension	/5	/5	Extensor Digitorum Communis, Extensor Indicis, & Extensor Digiti Minimi	
MP Abduction	/5	/5	Dorsal Interossei & Abductor Digiti Minimi	
MP Adduction	/5	/5	Palmar Interossei	
MP Flexion & PIP Extension	/5	/5	Lumbricles	
PIP Flexion	/5	/5	Flexor Digitorum Superficialis	
DIP Flexion	/5	/5	Flexor Digitorum Profundus	
IP Flexion	/5	/5	Flexor Pollicis Longus	
MP Flexion	/5	/5	Flexor Pollicis Brevis	
IP Extension	/5	/5	Extensor Pollicis Longus	
MP Extension	/5	/5	Extensor Pollicis	

			Brevis	
Thumb Radial Abduction	/5	/5	Abductor Pollicis Longus	
Thumb Palmar Abduction	/5	/5	Abductor Pollicis Brevis	
Thumb Adduction	/5	/5	Adductor Pollicis	
Opposition of the Thumb & Small Finger	/5	/5	Opponens Pollicis & Opponens Digiti Minimi	

Hand Strength: R _____ L _____

Pinch Strength: R _____ L _____

Hand/Wrist Observations: _____

Hand Dominance: R L

Evaluation Summary

Client's Strengths: _____

Problem Areas: _____

Client-identified occupational role: _____

Client-identified occupation: _____

Intervention Plan

Long Term Goal #1: _____

 Short Term Goal: _____

 Short Term Goal: _____

Long Term Goal #2: _____

 Short Term Goal: _____

 Short Term Goal: _____

Intervention Methods: _____

Frequency and Duration of Occupational Therapy: _____

Goals and Possible Interventions Discussed with Client: Yes No

Therapist Signature

Date

This form is the authentic work of the authors of this clinical guide: Nims, A., & Schumacher, K.

Table 7: Occupational Therapy Assessment Tools for Clients with Rheumatoid Arthritis

Assessment	Description	Time to Administer	Where to find the assessment	Additional Information & Research
Evaluation of Daily Activity Questionnaire (EDAQ)	This self-assessment consists of two parts; part one focuses on how arthritis is affecting clients currently while part two asks about their ability to complete daily activities within the past two weeks.	30-60 minutes	The two forms of the Evaluation of Daily Activity Questionnaire (Parts 1,2, & 3) and the EDAQ Manual v1 are available for download at: http://usir.salford.ac.uk/view/authors/index.H.html	Hammond, A., Tyson, S., Tennant, A., Nordenskiold, U., & Greenhill, Y. (2012). Development of the evaluation of daily activity questionnaire (EDAQ) in rheumatoid arthritis: Psychometric testing. <i>Annals of the Rheumatic Diseases</i> , 71(3).
Workplace Activity Limitations Scale (WALS)	This is a self-assessment that focuses on the disability/activity limitations in the workplace related to chronic physical illness.	5 minutes	Available for download at : http://www.acreu.ca/research/measurements.html	Tang, K., Beaton, D., Boonen, A., Gignac, M., & Bombardier, C. (2011). Measures of work disability and productivity: Rheumatoid arthritis specific work productivity survey (WPS-RA), work limitations questionnaire (WLQ), and work productivity and activity impairment questionnaire (WPAI). <i>Arthritis Care & Research</i> , 63(S11), 337-349. doi: 10.1002/acr.20633

<p>Arthritis Work Spillover (AWS)</p>	<p>This assessment is a 6-item scale used to assess the extent to which the demands of arthritis interfere with work performance and the extent to which work interferes with managing arthritis.</p>	<p>5 minutes</p>	<p>Available for download at : http://www.acreu.ca/research/measurements.html</p>	<p>Gignac, M.A., Sutton, D., & Badley, E. (2006). Reexamining the arthritis-employment interface: Perceptions of arthritis work spillover among employed adults, <i>Arthritis Care & Research</i>, 55(2), 233-240. doi:10.1002/art.21848</p>
<p>RA Knowledge Questionnaire</p>	<p>This questionnaire measures client's knowledge of rheumatoid arthritis self-management strategies in for those receiving a home-based physiotherapy intervention</p>	<p>10-15 minutes</p>	<p>Available for download at : http://www.acreu.ca/research/measurements.html</p>	<p>Lineker, S.C., Badley, E.M., Hughes, E.A., & Bell, M.J. (1997). Development of an instrument to measure knowledge in individuals with rheumatoid arthritis: The ACREU rheumatoid arthritis knowledge questionnaire. <i>The Journal of Rheumatology</i>, 24(4), 647-653.</p>
<p>Michigan Hand Outcomes Questionnaire</p>	<p>This is a self-assessment of how a client views their hands and health within the past week.</p>	<p>15-20 minutes</p>	<p>Available for download at: https://sites.google.com/site/mhqhand/home/the-mhq</p>	<p>Chung, K.C., Pillsbury, M.S., Walter, M.R., & Hayward, R.A. (1998). Reliability and validity testing of the Michigan hand outcomes questionnaire. <i>The Journal of Hand Surgery</i>, 23(4), 575-587. doi: 10.1016/S0363-5023(98)80042-7</p>

<p>Arthritis Hand Function Test (AHFT)</p>	<p>This 11-item assessment focuses on the performance of various hand activities and correlating hand strength and dexterity for clients with arthritis.</p>	<p>20 minutes</p>	<p>Copies of this assessment can be purchased through the School of Rehabilitation Services, University of British Columbia Westbrook Mall Vancouver, BC, Canada Author: Catherine Backamn OTR, Hazel Mackie OTR, & Jackie Harris OTR</p>	<p>Poole, J. L. (2003). Measures of adult hand function. <i>Arthritis & Rheumatism</i>, 49(5), 59-66. doi: 10.1002/art.11406</p>
<p>Disabilities of the Arm, Shoulder, and Hand (DASH); QuickDASH</p>	<p>This assessment is a 30 item self-report questionnaire measuring function and symptoms present in clients with a variety of musculoskeletal disorders of the upper limb.</p>	<p>10-15 minutes</p>	<p>Institute for Work and Health 481 University Ave. Suite 800 Toronto, ON M%G 2E9 Canada www.dash.iwh.on.ca</p>	<p>Aktekin, L., Filiz, E., Baskan, B., Filiz, S., Simten, M., Oksuz, E., & Bodur, H. (2011). Disability of arm, shoulder, and hand questionnaire in rheumatoid arthritis clients: Relationship with disease activity, HAQ SF-36, <i>Rheumatology International</i>, 31(6), 823-826. doi: 10.1007/s00296-010-1568-1</p>

<p>Canadian Occupational Performance Measure (COPM)</p>	<p>This assessment is a client centered semi structured interview that focuses on a variety of activity limitations and participations in occupations. Clients are able to identify their top problems in various areas and rating each item with its importance.</p>	<p>30-40 minutes</p>	<p>Canadian Association of Occupational Therapists CTTC Building 3400-1125 Colonel By Dr. Ottawa, ON K1S 5R1 canada https://www.caot.ca</p>	<p>Nieuwenhuizen, M.G., De Groot, S., Janssen, T. W., Van der Maas, L. C., & Beckerman, H. (2014). Canadian occupational performance measure performance scale: Validity and responsiveness in chronic pain. <i>Journal of Rehabilitation Research & Development</i>, 51(5), 727-746. doi: 10.1682/JRRD.2012.12.0 221</p>
<p>Health Assessment Questionnaire (HAQ)</p>	<p>The HAQ is useful as a measure of outcomes for clients with a variety of rheumatic diseases.</p>	<p>20-30 minutes</p>	<p>Available through ARAMIS (Arthritis,, Rheumatism, and Aging Medical Information System) http://aramis.stanford.edu/HAQ.html</p>	<p>Xavier, J. Saskia, D., & Filip, D. (2014). Assessment of activity limitation with the health assessment questionnaire predicts the need for support measures in clients with rheumatoid arthritis: A multicenter observational study. <i>Public Library of Science</i>, 9(9), 1-8. doi: 10.1371/journal.pone.0106749</p>

<p style="text-align: center;">Arthritis Impact Measurement Scales 2 (AIMS2)</p>	<p>This assessment is used to measure changes in global health, pain, mobility and social functioning in adults diagnosed with arthritis.</p>	<p>15-23 minutes</p>	<p>Available with user manual from Dr. Meenan, Dean, Boston University School of Public Health, 715 Albany St, T-C-306, Boston, MA 02118. Email: rmwwnan@bu.edu Also available at http://www.qolid.org.</p>	<p>Meenan, R.F., Gertman, P.M., & Mason, J.H. (1980). Measuring health status in arthritis: The arthritis impact measurement scales. <i>Arthritis Rheumatism</i>, 23, 146-152.</p>
<p style="text-align: center;">Relative Mastery Measurement Scale</p>	<p>The relative mastery measurement scale is used to assess a client's perceptions regarding their efficiency, effectiveness, and satisfaction according to various occupational challenges they face, such as the case with rheumatoid arthritis.</p>	<p>5 minutes</p>	<p>The scale is provided in the Appendix of the following article.</p>	<p>George, L., Schkade, J., & Ishee, J. (2004). Content validity of the relative mastery measurement scale: A measure of occupational adaptation. <i>The Occupational Therapy Journal of Research</i>, 24(3), 92-102.</p>
<p style="text-align: center;">Arthritis Self Efficacy Scale</p>	<p>This 20 item scale is used to evaluate a client's self-management approaches to their disease of RA.</p>	<p>10-15 minutes</p>	<p>The scale can be found through the Stanford Client Education Research Center at : http://clienteducation.stanford.edu/research/searthritis.html</p>	<p>Lorig, K., Brown, B.W., Ung, E., Chastain, R., & Shoor, H. S. (1989). Development and evaluation of a scale to measure the perceived self-efficacy of people with arthritis. <i>Arthritis and Rheumatism</i>, 32(1), 37-44.</p>

<p>RA Work Instability Scale</p>	<p>This is a screening tool used to identify various work instability and the associated risks, which are broken up into low, moderate, and high risk that is predictive of future work disability.</p>	<p>5 minutes</p>	<p>A copy of the RA-Work Instability Scale can be obtained through: Vikki Wilkinson, Academic Unit of Musculoskeletal and Rehabilitation Medicine, The University of Leeds, 36 Clarendon Road, Leeds LS2 9NZ West Yorkshire</p>	<p>Gilworth, G., Chamberlain, A., Harvey, A., Woodhouse, A., Smith, J., Smyth, M., & Tennant, A. (2003). Development of a work instability scale for rheumatoid arthritis. <i>Arthritis & Rheumatism</i>, 49(3), 349-354. doi: 10.1001/art.11114</p>
<p>Psychosocial Impact of Assistive Devices (PIADS)</p>	<p>This assessment is a 26 item, self-report questionnaire that assess the effects of assistive technology devices on the quality of life and well-being of the clients that use them. It measures feelings of competency/efficacy, a willingness to try out new things, and an indication of overall emotional health.</p>	<p>5-10 minutes</p>	<p>Jeffrey Jutai, PhD University of Western Ontario, Canada jjutai@uOttawa.ca</p>	<p>Jutai, J., & Day, H. (2002). Psychosocial impact of assistive devices (PIADS). <i>Technology and Disability</i>, 14, 107-111.</p>
<p>Ergonomic Assessment Tool for Arthritis</p>	<p>This assessment helps occupational therapists complete an ergonomic assessment with the goal of recommending ergonomic modifications for various jobs for those living with some form of inflammatory arthritis.</p>	<p>45-90 minutes</p>	<p>This assessment is available at: http://ergotool.arthritisresearch.ca/EA-TA-TherapistAssessmentGuide1.pdf</p>	<p>Backman, C. L., Village, J., & Lacaille, D. (2008). The ergonomic assessment tool for arthritis: Development and pilot testing. <i>Arthritis & Rheumatism</i>, 58(10).</p>

<p>Disease Activity Score (DAS)</p>	<p>The DAS was created as a method of measuring disease activity in clients with rheumatoid arthritis specific to level of joint involvement. The number of swollen and tender joints will correlate with a number between 0-10, indicated the level of disease activity.</p>	<p>10-15 minutes</p>	<p>The DAS can be found at the following website and location provided.</p>	<p>Radboud University Nijmegen Medical Centre (2014). DAS-score website. Retrieved from http://www.das-score.nl/das28/en/</p>
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Self-Management Strategies

Rheumatoid Arthritis Occupational Therapy in Primary Care

As rheumatoid arthritis is a chronic debilitating condition, it can often lead to feelings of being out of control of one's health and life. Using self-management strategies can help put clients back in the driver's seat, and allow them to feel a sense of control and ownership for their own health. In accordance with the occupational therapy model of Occupational Adaptation, this is also known as increasing a client's level of relative mastery. Managing a chronic condition such as rheumatoid arthritis creates an occupational challenge, and in order for someone to successfully meet and overcome that challenge on a daily basis, an internal process of adaptation needs to occur.

Outlined below are occupational therapy strategies and skills that can be utilized and discussed with clients in order to increase successful self-management as a supplement to the strategies discussed in other sections, such as self-management using joint protection. In addition, worksheets have been provided to be utilized with clients in relation to self-management.

Self-Management References:

- George, L., Schkade, J., & Ishee, J. (2004). Content validity of the relative mastery measurement scale: A measure of occupational adaptation. *Occupational Therapy Journal of Research: Occupation, Participation, and Health*, 24(3).
- Government of Western Australia Department of Health (2007). Chronic conditions self-management. Retrieved from http://www.selfmanagement.health.wa.gov.au/index.php?option=com_content&view=featured&Itemid=301
- Institute for Healthcare Improvement. (2008, November 12). Health disparities collaboratives: Chronic care training manual. Retrieved from <http://www.ihimethods.org/IHI/Topics/Improvement/ImprovementMethods/HowToImprove/>
- Lorig, K. (2012). Living a health life with chronic conditions: Self-management of heart disease, arthritis, diabetes, depression, asthma, bronchitis, emphysema and other physical and mental health conditions. Boulder, CO: Bull.
- Schultz, S. (2009). Theory of occupational adaptation. In Crepeau, E. B., Cohn, E. S., & Schell, B. A. (Eds.), *Willard & Spackman's occupational therapy* (11th ed.) (pp. 462-475). Baltimore: Lippincott, Williams, & Wilkins.
- Washington University in St. Louis School of Medicine. (2008). Primary care resources and supports for chronic disease self-management. Retrieved from www.improveselfmanagement.org

Determining Client Readiness for Self-Management

Prior to educating clients about the chronic disease self-management, the occupational therapist must determine the client's readiness and willingness to incorporate these changes into their daily routines. Based on the concepts of the Occupational Adaptation Model, occupational therapists can determine a client's readiness in order to gauge how to most appropriately facilitate change. The Occupational Adaptation Model process is described below and depicts how clients determine occupational readiness to adapt.

To begin, individuals desire mastery. Clients want to be able to do what they want to do, and the occupational environment demands mastery in order to successfully complete that particular occupation. However, because RA leads to decreased ability to participate in meaningful occupations due to pain, fatigue, decreased range of motion, etc., an individual with RA does not possess the necessary mastery skills to complete certain occupations.

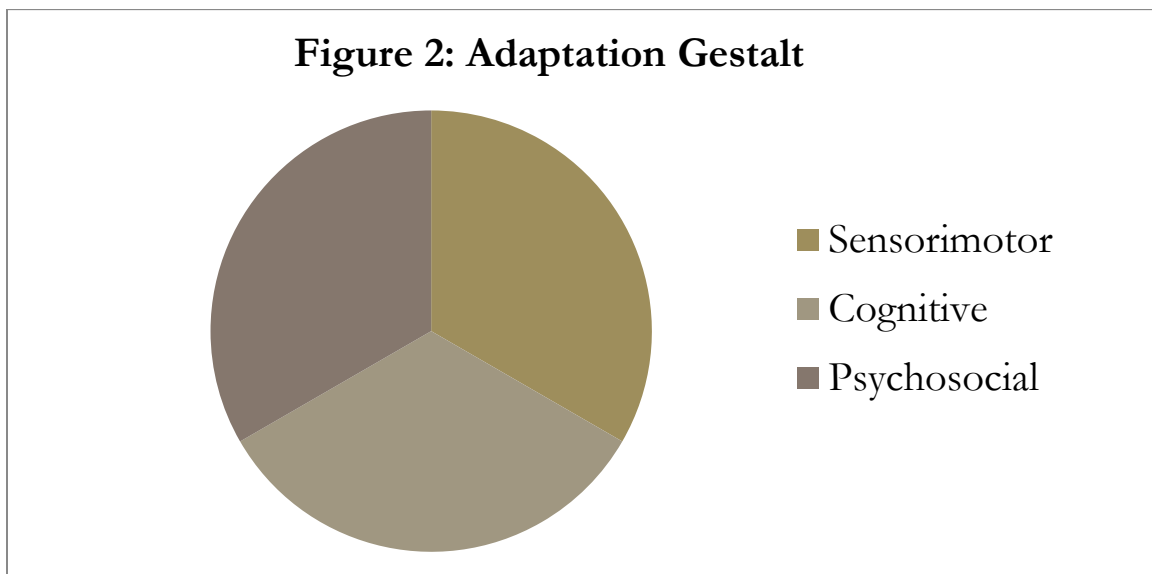
When an individual generates a response, a number of factors must be present for that adaptation to occur. The first step in determining an appropriate plan of action includes choosing a level of adaptation energy, response mode, and behavior.

- **Adaptation Energy:** Individuals use adaptation energy at either a primary or secondary level of cognitive awareness. Both levels of energy are of equal importance.
 - **Primary level:** The person is using a high level of cognitive awareness when contemplating an adaptive response.
 - **Secondary level:** The person is using a low level of cognitive awareness and is not engaged in creating an adaptive response; however, this is a more efficient use of energy.

- **Adaptation Response Modes:** Strategies utilized by the individual that have been established throughout life. Usually, individuals choose a previously existing mode to execute a task. If they do not master the activity through the use of that previously existing mode, he or she may choose to modify the existing mode or formulate a new mode altogether.
 - **Existing:** An adaptive mode that has been previously utilized.

- **Modified:** An adaptive mode that has been previously utilized, but modified slightly.
 - **New:** An adaptive mode that is created because an existing or modified mode did not accomplish the task.
- **Adaptation Response Behaviors:** These include the mannerisms the individual portrays when faced with an occupational challenge.
 - **Hyperstable:** Individual becomes stuck and freezes when faced with an occupational challenge.
 - **Hypermobile:** Individual will frequently change solutions or move from one idea to the next.
 - **Transitional:** Greatest chance for positive outcome. This response is a combination of hyperstable and hypermobile behaviors in which the individual is able to respond appropriately.

After the individual has chosen a level of adaptation energy, response mode, and behavior, the next step involves configuration of the sensorimotor, cognitive, and psychosocial systems of the individual. This alignment is known as an adaptation gestalt (Figure 2).



The chart represents an equal balance of the sensorimotor, cognitive, and psychosocial systems. However, each occupational challenge demands for a unique adaptation gestalt configuration, most of which will be an imbalance of the three systems. For example, when a task requires high cognitive

functioning, but the client is severely depressed, the individual is going to have a difficult time adapting in order to successfully complete the task.

The occupational therapist can help in reaching the appropriate configuration by addressing depressive psychosocial symptoms and enhancing cognitive functioning of the client. Ultimately, clients are most often ready to adapt when:

- 1) The individual has identified that there is an occupational challenge and is using both primary and secondary energy when thinking about the challenge.
- 2) The individual has already attempted to utilize existing response modes to master the occupation, but was unsuccessful. This is where occupational therapy becomes useful in introducing modified and new response modes.
- 3) The individual is behaving using the transitional response.
- 4) The adaptation gestalt of the individual is in configuration to the demands of the occupation. Again, occupational therapists can facilitate a balance to promote adaptation readiness.

Relative Mastery Measurement Scale

There are specific assessments available to use with clients that may measure components of self-management, such as the Relative Mastery Measurement Scale (RMMS) from the model of Occupational Adaptation. This assessment focuses on an evaluation of a person's internal sense of their effectiveness, efficiency, and satisfaction with responses to occupational challenges. This assessment is included in addition to other resources in the assessment section that may better suit clinical needs. To blend several of the self-management strategies discussed throughout the sections of this manual, a worksheet has been created for use with clients as a comprehensive self-assessment of rheumatoid arthritis self-management (Worksheet 2).

Worksheet 2: Rheumatoid Arthritis Self-Management Log

Today I feel: _____

Because _____

My pain level today: _____ (1=no pain at all, 10=worst pain I've ever felt)

My symptoms: _____

Current goal for today: _____

On a scale of 1-5, how satisfied are you with your ability to self-manage your symptoms today?

1 2 3 4 5
Very dissatisfied Moderately satisfied Very satisfied

Which self-management strategies have I utilized today?
(Check all that apply)

- | | |
|---|---|
| <input type="checkbox"/> Pain management strategies | <input type="checkbox"/> Splint use |
| <input type="checkbox"/> Sought out social support | <input type="checkbox"/> Medication |
| <input type="checkbox"/> Relaxation techniques | <input type="checkbox"/> Adaptive equipment use |
| <input type="checkbox"/> Joint protection strategies | <input type="checkbox"/> Use of a physical agent modality (i.e., hot/cold pack) |
| <input type="checkbox"/> Energy conservation strategies | <input type="checkbox"/> Rest/Pacing of activities |

How did these strategies help me?

Is there anything I need to adapt within these strategies to make them more effective?

Have I learned anything new today about myself and my ability to self-manage my rheumatoid arthritis symptoms?

Are there any outside supports available that I can rely on and can keep me accountable for my self-management?

What are some methods I can utilize this week to keep me motivated in working towards my goals?

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The 5 A's Cycle

This technique is also known as the Behavior Change Counseling Model. It utilizes five different steps that can be used to help to support your client's ability to self-manage their conditions.

1. Assess

This step involves exploring your client's current knowledge, belief, and values. Do they think they would be able to manage their own symptoms? Have they said they believe they have enough knowledge regarding rheumatoid arthritis? Have they made statements regarding their perceived ability to confidently self-manage their condition?

2. Advise

Act as a consultant with your client. Share information with them such as the risks and common health behaviors of their present illness. Ask them what information they've already received, either from past physicians, other health care professionals, or through their own search for information. Ensure that the information they possess is accurate and current. Other subjects to advise on would be:

- What does my client want to know more about?
- Give them advice based on your clinical reasoning skills and their current needs.
- Make sure that the advice given to them is clear.
- Match your language and vocabulary use to your client's needs and level of understanding.
- Give only the amount of information that can be absorbed at one time; make sure not to overload them during a given session.

3. Agree

Set goals together with your client throughout the therapy process. Make sure that the goals you are setting are similar to those that the client wants to accomplish as well. To prioritize, have your client rate each goal using an importance scale of from 1-10, 1 indicating low importance and 10 indicating a high level of importance.

4. Assist

Help your client to identify current barriers keeping them from successful self-management. Assist them in their self-management process, but help them to find solutions and potential barriers to success on their own. Discuss strategies and available resources.

5. Arrange

When you and your client are wrapping up a current session or discussion, arrange a follow up appointment or visit before they leave. This provides them with a time frame for working on some of the strategies you discussed and allows them to work on achieving their goals in a timely manner. In addition, doing this indicates support for your client in their ongoing task of disease management.

Successful Steps for Problem-Solving

1. Identify the problem.

- This is the most important step, in addition to being the most difficult. Sometimes factors in client's lives may not be recognized as a current problem.

2. List ideas to solve the problem.

- Allow your clients to come up with this list on their own and begin their process of beginning to tackle their problems on their own.

3. Select one method to try.

- Start with one of the methods on the list of possible problem solving ideas. Remember that not all methods will be successful and some may be difficult.

4. Check the results.

- Was your client successful in tackling part or the entire problem? Was the method utilized successful in any way? If so, discuss how this particular method worked and how to continue to use it in the future with similar problems.

5. Pick another idea if the first didn't work.

- If one method was attempted and didn't work, discuss what went wrong and why the selected method was unsuccessful.

6. Use other resources.

- Consult with others including health professionals and additional outlets of social support.

7. Accept that the problem may not be solvable now.

- With chronic conditions, some problems may not have an easy fix. It is important to come to terms if a client has utilized all available methods to attempt to solve a problem. Remind clients that although a problem may appear unsolvable now, that doesn't mean it cannot be resolved at a later date.

Successful Decision Making

Successful decision-making is an important piece of the self-management process. Just like problem solving, there are several steps to think about that make decision making an easier experience.

1. Identify the options.

- Are there various ways or methods clients can use in order to make this particular decision?

2. Identify what you want.

- Sometimes it can become difficult to narrow down the various decisions that need to be made. Have your client identify their priorities and begin to outline important decisions to be made.

3. Write down pros and cons for each option.

- Have your client think about the pros and cons for each decision they're considering. Don't forget to discuss physical, social, economic, and emotional effects of certain decisions.

4. Rate each item on the list.

- Using a scale from 1-5, rate each pro and con with a rating of 1 meaning little importance and a rating of 5 meaning a high level of importance.

5. Add up the ratings for each column.

- The column with the higher score from all of the ratings added up can aid in the decision-making process.

6. Apply the "gut test".

- Ask your client to think about making a specific decision, reflect on how it makes them feel. If the feeling is positive, then making this decision may be a good idea. If the feeling of making the decision is a negative one, consider other alternatives.

Decision-Making Table

Utilize Table 8 with clients will help them reflect on the various pros and cons of a decision that is currently being faced. The following is an example of how the table can be used.

Example: Last year I was diagnosed with rheumatoid arthritis. I've been experiencing frequent symptom flare-ups in the past 6 months. Should I switch to a new medication?

Table 8: Effective Decision Making

Pros	Rating (1-10)	Cons	Rating (1-10)
Experiencing symptom relief	9	Trying another medication that doesn't work	7
Understanding my medication better	7	Adjusting to new side effects of a medication	5
Getting back to important daily activities	8	Getting used to a different medication schedule	5
Total	24		17

In the above example, the rating of the “pro” column outweighs the rating of the “cons” column. This would indicate that the decision being considered, that of changing to a new medication would be a good idea for this individual.

Pros	Rating (1-10)	Cons	Rating (1-10)
Total			

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Action Planning

Now that a decision has been made, steps must be utilized in order to effectively put a plan into place. Long-term goals can be overwhelming for clients, so it becomes important to allow them to break those goals down into smaller, more obtainable steps. This method can be used for a variety of goals, from medication management to getting into a healthy exercise regime.

Successful action plans are:

- Something you client's want to do
- Achievable
- Action-specific
- It answers the questions of what, how much, when, and how often
- The plan is something your client is confident in undertaking

When writing a plan:

1. Start where you are. Don't make a plan that is too outrageous from where you are currently sitting.
2. Schedule in some time off. Perfection isn't possible and shouldn't be expected all of the time.
3. Be sure that the outlined plan is something obtainable.
4. Upon completion, post the plan somewhere it will be seen and reflected on often.
5. Reward yourself. If you're on track for your plan let yourself feel a sense of accomplishment.

The plan your clients create should include the following:

What: What will your plan lead you to do?

How much: What will it take to accomplish your plan? Is there a significant amount of time and energy required?

When: When will you complete your plan by? Have you set a reasonable timeline for your goals?

How often: How often will this activity be done? Decide if this plan is something that is better off done every day or a few times a week

Principles of Joint Protection

Rheumatoid Arthritis Occupational Therapy in Primary Care

Joint protection, also known as ergonomic principles, is a self-management strategy that can be utilized by individuals with chronic disease like rheumatoid arthritis. Joint protection is an approach that aims at maintaining function ability and participation through the modification and alteration of daily occupations. Approaches include the alteration of movement patterns of the body, specifically the involved joints, use of adaptive equipment, and preserving energy through fatigue management. Through the use of joint protection techniques, clients with rheumatoid arthritis can minimize the damage and stress on joints and ultimately preserve joint integrity over time. Occupational therapists must educate individuals about joint protection and encourage them to adapt their current habits by following these principles on a daily basis.

Joint protection sources:

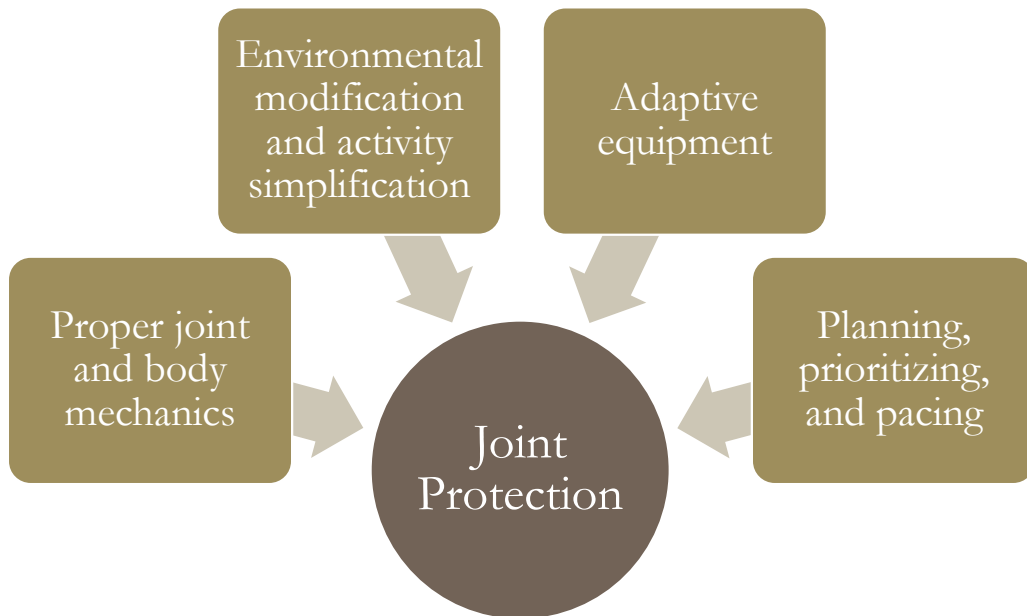
- Hammond, A. (2013). Joint protection. In Goodacre, L. & McArthur, M. (Eds.), *Rheumatology practice in occupational therapy: Promoting lifestyle management* (pp. 111-132). Chinchester, West Sussex, UK: Wiley-Blackwell.
- Hammond, A. (2013). Rheumatoid arthritis, osteoarthritis, and fibromyalgia. In Radomski, M. V. & Trombly-Latham, C. A. (Eds.), *Occupational therapy for physical dysfunction* (7th ed.) (pp. 1215-1242). Baltimore: Lippincott, Williams, & Wilkins.
- Macedo, A. M., Oakley, S. P., Panayi, G. S., & Kirkham, B. W. (2009). Functional and work outcomes improve in clients with rheumatoid arthritis who received targeted, comprehensive occupational therapy. *Arthritis & Rheumatism*, 61(11), 1522-1530. doi: 10.1002/art.24563
- Masiero, S., Boniolo, A., Wasserman, L., Mahiedo, H., Volante, D., & Punzi, L. (2007). Effects of an educational-behavioral joint protection program on people with moderate to severe rheumatoid arthritis: A randomized controlled trial. *Clinical Rheumatology*, 26, 2043-2050. doi: 10.1007/s100067-007-0615-0
- Niedermann, K., de Bie, R.A., Kubli, R., Ciurea, A., Steurer-Stay, C., Villiger, P. M., & Buchi, S. (2011). Effectiveness of individual resource-oriented joint protection education in people with rheumatoid arthritis: A randomized controlled trial. *Client Education and Counseling*, 82, 42-48. doi: 10.1016/j.pec/2010.02.014
- Yasuda, Y. L. (2008). Rheumatoid arthritis, osteoarthritis, and fibromyalgia. In Radomski, M. V. & Trombly-Latham, C. A. (Eds.), *Occupational therapy for physical dysfunction* (6th ed.) (pp. 1214-1243). Baltimore: Lippincott, Williams, & Wilkins.

Joint Protection Defined

Joint protection includes a variety of coping strategies and self-management techniques. Joint protection principles include:

- Modifying movement patterns of the body through the use of proper joint and body mechanics
- Restructuring the environment
- Simplification of daily activities
- Use of adaptive equipment and assistive technologies
- Adapting daily occupations, habits, and routines through the use of planning, prioritizing, pacing, and correct body posturing

Figure 3: Principles of Joint Protection



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Goals of Joint Protection

Occupational therapy's primary goal:

- Occupational therapists will instill hope into our clients that adaptation and modification will lead to continued performance in meaningful occupations.

Occupational therapy's secondary goals:

- Clients will develop a greater understanding of joint protection.
- Clients will develop an acceptance for the use of joint protection principles.
- Clients will adopt and incorporate joint protection principles into their daily routines.

If the above goals are met by clients, joint protection will lead to positive physiological and physical changes such as:

- Minimized pain during activities and rest resulting from increased pressure on nociceptors located in joint capsules cause by inflammation and/or mechanical forces on joints
- Minimized internal and external forces and loading on joints
- Reduced secondary inflammation and subsequent strain of soft tissues resulting from excess force on already inflamed and/or disrupted joints
- Preservation of joint integrity
- Reduced risk of development and/or progression of deformities
- Reduced pain from overuse of deconditioned muscles
- Reduced fatigue by minimizing the effort required to perform occupational tasks
- Improve or maintain function and participation in meaningful activities

Client Education of Joint Protection Strategies

Joint protection principles include a variety of strategies to preserve joint integrity. Research has shown that habit formation and utilization of joint protection principles among those with rheumatoid arthritis aids in the reduction of the pain, fatigue, and functional impairment. However, it is the responsibility of the occupational therapist to properly educate the client according to the client's preferred learning style in order to promote and encourage self-management. Ergonomic principles have been taught using behavioral, psycho-education, and self-efficacy enhancing approaches. These approaches have shown to be more beneficial with client compliance versus the use of traditional methods of teaching. The following are references of research regarding specific education strategies of ergonomic principles among individuals diagnosed with rheumatoid arthritis.

Table 9: Evidence for Occupational Therapy for Joint Protection and Ergonomic Principles

Intervention	Description of Intervention	Participants	Type of Research	Benefits	Reference
Vocational Rehabilitation	Individualized vocational rehabilitation-focused occupational therapy versus usual care.	Employed individuals with perceived risk of work disability due to RA.	Randomized controlled trial	Participants demonstrated significant functional and work-related outcomes, as well as pain, quality of life, and helplessness.	(Macaedo et al., 2009)
Individual, resource-oriented approach using the Pictorial Representation of Illness & Self Measure (PRISM)	Conventional versus PRISM-based joint protection education. PRISM education focused on self-efficacy, perceived	53 participants with a diagnosis of RA.	Randomized controlled trial	The use of PRISM-based joint protection education improved participant learning and enhanced client-therapists	(Niederman et al., 2011)

	burden of illness, identification of resources.			communication.	
Group educational-behavioral program conducted by an interdisciplinary team	Joint protection education including RA information, ergonomic principles in relation to occupations, and environmental modifications versus no education.	85 participants with a diagnosis of RA taking anti-tumor necrosis drugs.	Randomized controlled trial	Results indicate clients receiving joint protection education showed decreased pain, increase physical function, social interaction, and perceived health status.	(Masiero et al., 2007)

Joint Protection Educational Approaches

Within the primary care setting, occupational therapists will likely be seeing clients one-on-one. Because of this, cognitive-behavioral and psychomotor approaches to teaching joint protection principles to clients diagnosed with RA are useful.

▪ **Cognitive-Behavioral Approach:**

- Correlating with the beliefs of Model of Occupational Adaptation, the cognitive-behavioral frame of reference also views the client as the agent of change while the occupational therapist provides interventions to help facilitate the client toward adaptive change.
- Collaborating with the client in setting both long and short term goals can be motivational for the client. Occupational therapist will set at least one goal per session to be addressed until the next session.
- Each session should include discussion about progress in achieving goals, positive feedback, and problem-solving to minimize barriers to success.

▪ **Psychomotor Approach:**

- This approach involves developing correct patterns of movement. The goal of this approach is to develop the mental and physical skills to successfully perform joint protection strategies and incorporate them into daily routines.
- Because this educational approach requires demonstration and practice, equipment and space are necessary for practice.
- It is essential to introduce the client to joint protection principles by explaining the session's objectives, instructions, and relationship to the individual.
- A variety of teaching methods can be utilized:
 - Therapist demonstration of the technique to the client.
 - Therapist demonstration of the while providing an explanation.
 - Client verbal description while therapist demonstrates.
 - Client demonstration of the principle to the client with therapist feedback.
- Gradually build up to occupations requiring multiple joint protection methods after client has been educated on the principles.

Joint Protection Principles

Once the individual has developed a readiness to adopt the principles of joint protection into their daily routines, occupational therapists can educate clients on the principles of joint protection. The following depicts the principles of joint protection.

1. Respect Pain

- Pain most commonly occurs during inflammation and flare-ups.
- When pain occurs, educate clients to reduce their activity level and rest.
- Any pain lasting over two hours is indicative that the occupation should be adapted or modified.

2. Maintain Muscle Strength and Joint Range of Motion

- This principle emphasizes the importance of client compliance with a home exercise program.
- Provide your clients with an easy to understand home exercise program. When acute inflammation is present, educate clients to do gentle and pain-free range of motion on impacted joints. Educate them how to correctly perform each exercise. Ensure that learning has occurred by having the client demonstrate the exercise to you, and answer any questions that may arise.
- The goal of the home exercise program is to strengthen surrounding muscles of affected joints.
- Confirm each exercise is not painful for the client and does not accentuate any deformities.

3. Avoid Staying in One Position for Too Long

- Remaining in a single position for an extended period of time causes muscle fatigue which leads to joint instability.
- Educate clients to change positions frequently or perform range of motion exercises every 15 to 20 minutes.

4. Use the Joint within Its Most Functional Plane and Use Correct Patterns of Movement

- Educate clients to avoid twisting or other awkward positioning of the involved joints.
- Clients should move their body as a whole. Demonstrate this and allow the client to practice these movements and postures to ensure learning has occurred.
- Splinting can assist with keeping joints within their normal range of motion and proper alignment.
- When lifting objects, keep both feet on the floor with toes pointed straight ahead; bend at the hips and knees while keeping the back straight.

5. Avoid Positions of Deformity

- Each client may present with a different deformity. Educate the client about common activities that may aggravate the joints related to the deformity, and encourage alternative methods such as the use of adaptive equipment or taking periodic rest breaks.
- Increase client awareness of the joints that are mostly highly impacted.
- If MCP joints are involved, avoid the following activities requiring ulnar deviation:
 - Holding a knife
 - Lifting plates, pots, and pans
 - Opening jars
 - Turning a door knob
 - Pushing in a drawer
 - Wringing out a rag
- If carpal joints are involved, avoid the following activities requiring radial deviation:
 - Washing or wiping a counter top, window, etc.
 - Turning a doorknob or handle
 - Excessive writing
 - Stirring and mixing
- If the joints of the fingers are involved, avoid the following activities requiring finger flexion and extension
 - Typing
 - Writing
 - Tying shoes
 - Buttoning a shirt

6. Use the Larger, Stronger, and Non-Involved Joints Available

- Educate your clients to use the more proximal joints of the body, such as the elbow or shoulder, but only if the client does not experience symptoms with those joints.
- Examples of using proximal joints in daily activities
 - Carry a purse on your shoulder rather than your hands
 - Use hips to open and close doors
 - Feet can be used to close low drawers and cupboards
 - Carry items using two or more joints or using both hands

7. Avoid Activities that Cannot be Stopped Immediately

- With prolonged activity, fatigue leads to improper use of body mechanics causing excessive stress and force on inflamed joints.
- When pain does occur, it is important to quit what you are doing.
- Consider doing activities requiring extended period of time during the time of the day in which energy levels are at its highest.

8. Balance Rest and Activity

- This principle relates to energy conservation and fatigue. Refer to the energy conservation section for more details related to this joint protection principle.

9. Reduce the Force and Effort Needed to Perform Activities

- This principle relates to the use of adaptive equipment and activity adaptation. Refer to the adaptive equipment section for more details related to this joint protection principle.

Energy Conservation

Rheumatoid Arthritis Occupational Therapy in Primary Care

Fatigue is a common symptom among those diagnosed with rheumatoid arthritis that greatly impacts one's ability to engage in meaningful occupations. Individuals often experience extreme lethargy and decreased energy and drive leading to an inability to perform activities of daily living, perform duties at work, or interact with friends and family. Occupational therapists can educate clients on energy conservation techniques in order to appropriately manage fatigue and preserve independence and quality of life. Energy conservation consists of adaptation strategies in which principles of efficiency, planning, prioritizing, and organizing are applied to daily occupations to reduce the amount of energy expenditure needed to perform activities.

Energy Conservation Reference:

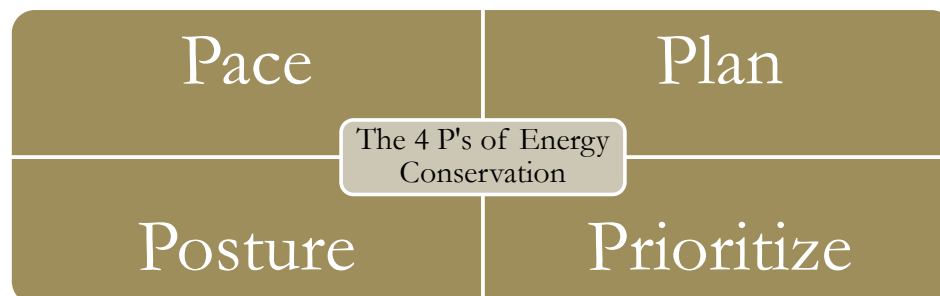
Dreiling, D. (2009). Energy conservation. *Home Health Care Management*, 22(26), 26-33. doi: 10.1177/1084822309340301

The 4 P's of Energy Conservation

The 4 P's model provides an easy to remember guide to energy conservation, and pace, plan, posture, and prioritizing strategies can be easily taught to clients with rheumatoid arthritis.

- ***Pace***
 - Achieve a balance of rest and activity
 - Incorporate frequent, yet brief periods of rest
 - Avoid using sudden bursts of energy
 - Move at a slow, relaxed, and comfortable speed
 - Use deep breathing to increase oxygen intake
- ***Plan***
 - Do not plan too many activities requiring heavy energy expenditure in a single day or week
 - Plan time so there is balance of rest and work
 - 10-15 minutes of rest per hour should be incorporated into a schedule
 - It is beneficial to plan out activities at least one week ahead of time
 - Assure all equipment is within hands-reach prior to completion of an activity in order to avoid unnecessary trips
 - Use a journal or create a "To-Do" list of the activities that need to be done
- ***Posture***
 - Proper body posture entails the use of muscles within their optimal range of motion
 - Reposition self often to increase blood flow and decrease muscle fatigue
 - Avoid repetitive and excessive bending or reaching
 - Sit for as many activities are possible
 - Slide or transport items on a cart with wheels rather than carrying
 - If you have to carry items, carry them close to the body
- ***Prioritize***
 - Each individuals places value to activities differently
 - Engage in the activities that must be accomplished first
 - Decide which activities can be done independently and which tasks will require assistance

Figure 4: The 4 P's of Energy Conservation



Energy Conservation and Daily Occupations

The 4 P's model provides a general guideline to conserving energy and managing fatigue. The following includes specific energy-conserving techniques related to daily activities. These strategies can be introduced to clients with rheumatoid arthritis to promote the management of their fatigue.

▪ **Dressing**

- Gather all clothing items, jewelry, shoes, etc. first, and place them within reach.
- Lower body dressing (completed first)
 - Sit in a straight-back chair.
 - Limit the amount of bending by crossing the legs over the knee, placing feet on a step stool, or using long-handled reachers.
 - Put on underwear and pants/skirt/shorts on and then pull them up at the same time.
 - Slip-on shoes should require less energy than shoes that tie or buckle.
- Upper body dressing
 - Front-button shirts require less energy than tops that go over the head.
 - Fasten bras in the front and then bring into the correct position.
 - Use a button-hook.
- Lower the rods in the clothes closet to avoid reaching.

▪ **Grooming**

- Sit while completing grooming activities.
- Use an electric toothbrush. These often have larger handles making them easier to hold.
- Use a lightweight blow dryer, curling iron, etc.

▪ **Bathing/Showering**

- Sit in a shower bench or chair to undress, bathe, dry, and dress.
- Gather all necessary items first and place them within easy reach at waist level.
- Wash using a long-handled bath sponge to avoid excessive reaching.
- Use the cross-leg method to wash legs and feet to minimize bending.
- Use pump soap and shampoo containers to avoid squeezing, twisting, and grasping.
- Ensure the bathroom is well ventilated.

- **Meal Preparation**

- Plan menus in advance.
- Gather all necessary items first. Try using a wheeled cart to place items on.
- Sit on a high stool when washing dishes or when using the stove.
- Sit at a table while cutting or mixing.
- Use lightweight dishes and pots and pans that have two handles.
- Avoid meals that requiring constant stirring.
- Avoid carrying dishes with food in them by sliding them on the counter.
- Encourage family members to help out.

- **Household Chores & Cleaning**

- Clean one room a day versus the entire house.
- Take frequent rest breaks.
- Use long-handled cleaning tools to avoid bending, kneeling, and crouching positions.
- Sit to clean whenever possible.
- Use a lightweight vacuum.
- When making the bed, fix the sheets on one side and move only once to the other side to finish, or try to make most of the bed while you are still in it.

- **Shopping**

- Shop online.
- Plan ahead to avoid unnecessary trips.
- Go to stores when they are the least busy.
- Use a cart whenever possible.
- Bring a friend to help with loading and unloading.

Pain Management

Rheumatoid Arthritis Occupational Therapy in Primary Care

Individuals with rheumatoid arthritis that are unable to effectively manage their pain have been shown to have significantly decreased quality of life. According to Gong, Li, Li, and Mao (2013), persistent pain that is unmanaged can lead to substantial physical, psychological, and emotional dysfunction. In this study, 70% of clients with RA reported that the pain they felt on a daily basis was between moderate and severe. It becomes imperative to educate clients on various techniques that can be utilized to effectively treat their symptoms of pain, leading to increased daily functioning. The most common symptoms of pain are highlighted in addition to strategies that clinicians can educate their clients on in order to efficiently keep track of their pain symptoms and work towards successful self-management in this area.

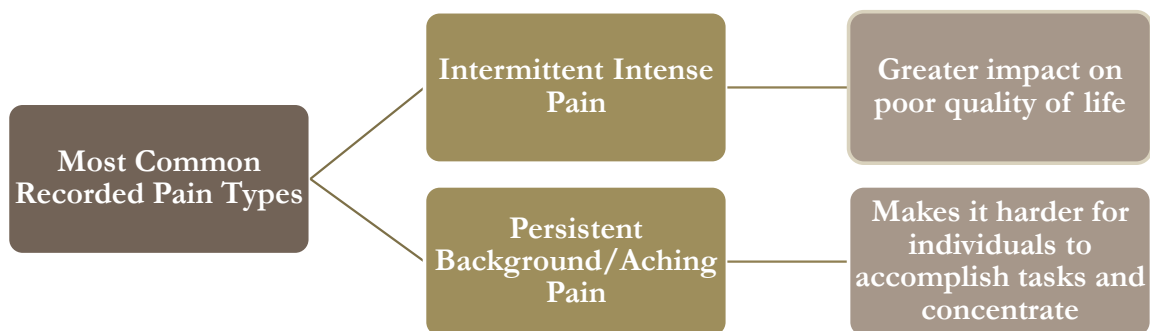
Pain Management Sources:

Gong, G., Li, J., Li, X., & Mao, J. (2013). Pain experiences and self-management strategies among middle-aged and older adults with arthritis. *Journal of Clinical Nursing*, 22, 1857-1869. doi: 10.1111/jocn.2134

Common Pain-related Rheumatoid Arthritis Symptoms

- Achy, fully body pain
- Pain isolated to a limb
- Intermittent intense pain
- Dull pain
- Pain associated with rheumatoid nodules
- A “tight” feeling pain from inflammation
- Pain with movement
- Throbbing pain

Figure 5: Commonly Reported Types of Pain



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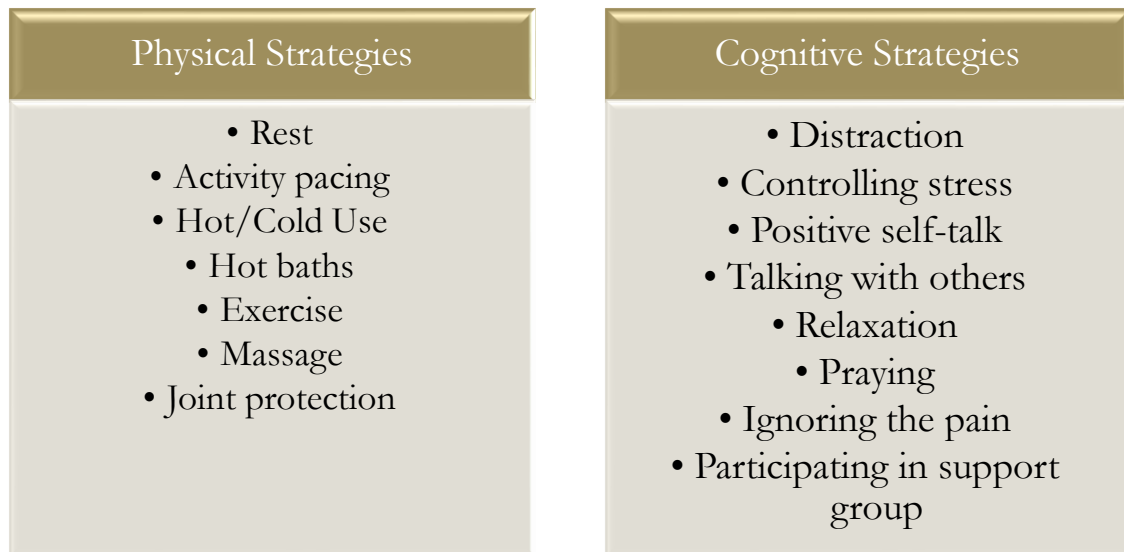
Most commonly reported pain locations

- Bilateral knees
- Small joints of hands
- Bilateral wrists
- Bilateral shoulders

Pain Self-Management Strategies

Just as with other self-management strategies, it is important to give clients the tools they need to feel effective in recognizing pain and utilizing proper strategies in order to minimize it. Gong, Li, Li, and Mao (2013) found that clients with rheumatoid arthritis that were currently not receiving any comprehensive therapy services used the following strategies below for pain management. They were broke down into two categories of management; physical and cognitive.

Figure 6: Physical and Cognitive Strategies of Pain Management



This chart is the authentic work of the authors of this clinical guide: Nims, A., & Schumacher, K. Information in this chart was adapted from the cited source.

Pain can often be managed more effectively if the individual can learn more about how their body responds to pain. Sometimes certain things can become triggers for pain, such as certain activities, time of the day, or even the amount of hours slept each night. By learning to recognize patterns in the way pain presents itself, individuals can attempt to manage pain before it become severe and alters with daily life activities. A good tool to utilize for this is a daily pain log (Worksheet 3). The visual analogue scale provided as part of the worksheet can be used to track trends in pain as well as by comparing the marks made on the lines that correspond to client pain level. The worksheet can be utilized daily to allow clients to recognize what triggers the pain, when it occurs, how long it lasts, the area of pain, and finally what self-management strategies were utilized in an attempt to decrease the pain.

Daily Pain Log: Worksheet 3

Date: _____

Rate your current pain level by making a mark on the following line:

(No pain)

(Worst pain I've ever felt)

Area of pain (check all that apply):

- | | |
|------------------------------------|----------------------------------|
| <input type="checkbox"/> head | <input type="checkbox"/> fingers |
| <input type="checkbox"/> neck | <input type="checkbox"/> hips |
| <input type="checkbox"/> shoulders | <input type="checkbox"/> knees |
| <input type="checkbox"/> forearm | <input type="checkbox"/> ankles |
| <input type="checkbox"/> wrists | <input type="checkbox"/> feet |

My pain would best be described as:

- | | | |
|---------------|-----------------|-----------------------|
| _____aching | _____pressure | _____pins and needles |
| _____shooting | _____tenderness | _____throbbing |
| _____sharp | _____heaviness | _____numbness |
| _____burning | _____cramping | _____stabbing |
| _____dull | _____radiating | _____tingling |

Duration of pain: _____

Time of day: _____

Methods used to decrease pain: _____

Medication Management

Rheumatoid Arthritis Occupational Therapy in Primary Care

Medications specifically for rheumatoid arthritis aim to decrease the level of inflammation occurring in the joints of the body. This helps to prevent or limit joint damage caused by the inflammation over time. The use of medications can also help with improving levels of fatigue and pain. While occupational therapists may not have a role in the discussion and prescription of certain medications, it is important however to help clients manage their medications successfully. Often, certain types of medications can cause side effects, which may affect a client's level of performance during interventions. It is important for occupational therapists to become familiar with the various medications clients may be prescribed. Discussion with clients will ensure awareness and understanding of the information about prescription medications as currently only 37% of clients given medications for rheumatoid arthritis felt well informed of possible side effects by their physicians.

Medication Management References:

Mayo Clinic. (2014, February 21). Rheumatoid arthritis: Treatments and drugs. Retrieved from http://www.mayoclinic.org/diseases-conditions/rheumatoidarthritis/basics/treatment/con20014868?_ga=1.7287159.49560033.1414694213

Medication Adherence in Clients

It is important to address medication compliance in clients with rheumatoid arthritis, as adherence was found to be anywhere from 16% to 84% (Elliot, 2008). Several factors related to this include client preference, current health conditions, available social support, and psychological functioning.

The most common types of medications are outlined along with their indications and possible side effects. With rheumatoid arthritis, many medications can be taken alone or in combination with others. It is important that clients maintain a schedule of when to take each medication. A medication management worksheet (Worksheet 4) can be given to clients to ensure medication adherence into their daily routines.

Figure 7: Most Common Medications for Rheumatoid Arthritis Management

NSAIDs: Non-Steroidal Anti-Inflammatory Drugs	<ul style="list-style-type: none">• Relieve pain and reduce inflammation
DMARDs: Disease-Modifying Anti-Rheumatic Drugs	<ul style="list-style-type: none">• Slow down rheumatoid arthritis progression, saving joints and tissues from permanent damage
Corticosteroids	<ul style="list-style-type: none">• Slow joint damage, reduce pain and inflammation
Immunosuppressants	<ul style="list-style-type: none">• Attempt to maintain immune system
TNF Alpha Inhibitors	<ul style="list-style-type: none">• Attempt to reduce pain, morning stiffness, and tender joints
Other drugs	<ul style="list-style-type: none">• Group of other drugs used to target inflammation in the body

The chart is the authentic work of the authors of this clinical guide: Nims, A., & Schumacher, K. Information in this chart was adapted from the cited source.

Table 10: Common Rheumatoid Arthritis Medications

Medication Classification	Types of Medication	Trade Names	Indications	Possible Side Effects
NSAIDs	<ul style="list-style-type: none"> • Ibuprofen • Naproxen sodium 	<ul style="list-style-type: none"> • Advil, Motrin • Aleve 	For symptomatic pain relief	ringing in ears, stomach irritation, heart problems, liver and kidney damage
DMARDs	<ul style="list-style-type: none"> • Methotrexate • Leflunomide • Hydroxychloro-quine • Sulfasalazine 	<ul style="list-style-type: none"> • Trexall • Arava • Plaquenil • Azulfidine 	During early stages of RA: 6-12 weeks within diagnosis	Liver damage, bone marrow suppression, eczemas, at risk for severe lung infections
Cortico-steroids	<ul style="list-style-type: none"> • Prednisone 	<ul style="list-style-type: none"> • Deltasone, Prednicot 	For short term disease control by reducing inflammation and pain, relieves acute symptoms	Acne, skin bruising, weight gain, cataracts, fractures due to bone, mood changes, nervousness thinning, diabetes
Immuno-suppressants	<ul style="list-style-type: none"> • Azathioprine • Cyclosporine 	<ul style="list-style-type: none"> • Imuran, Azasan • Neoral, Sandimmune, Gengraf 	Prescribed to tame the immune system from attacking the body's own joints	Increases risk for infections
TNF-Alpha Inhibitors	<ul style="list-style-type: none"> • Etanercept • Infliximab • Adalimumab • Golimumab • Certolizumab 	<ul style="list-style-type: none"> • Enbrel • Remicade • Humira • Simponi • Cimzia 	Can help reduce pain, morning stiffness, swollen and tender joints	Upper respiratory infections, increased overall risk of other serious infections
Other drugs	<ul style="list-style-type: none"> • Anakinra • Abatacept • Rituximab • Tocilizumab • Tofacitinib 	<ul style="list-style-type: none"> • Kineret • Orencia • Rituxan • Actemra • Xeljanz 	Decrease inflammation throughout the body	Itching, abdominal pain, headaches, runny nose, sore throat, increased risk of infection

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Medication Management: Worksheet 4

Medication Name	Dosage	Frequency	Form Pill: P Liquid: L Injection: I	Regular or Occasional Use	Experienced Side Effects	Notes

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Mental Health

Rheumatoid Arthritis Occupational Therapy in Primary Care

Occupational therapists often provide treatment for clients at the onset of diagnosis – a time when clients are trying to make sense of their chronic disease. Clients will be faced with challenges, changes, and uncertainties that could quite possibly lead to psychosocial impairments and decreased quality of life. Because occupational therapists often address physical symptoms, clients may be unaware of our role in mental health. Occupational therapists must educate clients that acknowledgment of psychosocial issues is just as important as addressing physical symptoms.

Mental Health References:

- Harrison, D. (2013). Psychological approaches to understanding and managing rheumatic conditions. In Goodacre, L. & McArthur, M. (Eds.), *Rheumatology practice in occupational therapy: Promoting lifestyle management* (pp. 82-93). Chichester, West Sussex, UK: Wiley-Blackwell.
- McArthur, M. (2002). *Unheard stories, unmet needs: The clinical and educational implications of perceptions of rheumatoid arthritis* (Unpublished doctoral dissertation). Center for Applied Research in Education, School of Education and Professional Development, University of East Anglia: Norfolk, UK.

The Chronic Disease Experience

McArthur (2002) identified that individuals diagnosed with chronic disease experience an altered sense of self. Occupational therapists can address aspects of this progression such as loss of identity and loss of productivity. Facilitating clients to identify and prioritize meaningful roles and occupations can help clients maintain a healthy sense of self. Interventions may focus on task simplification and self-efficacy to promote continued engagement in meaningful occupations related to desired roles.

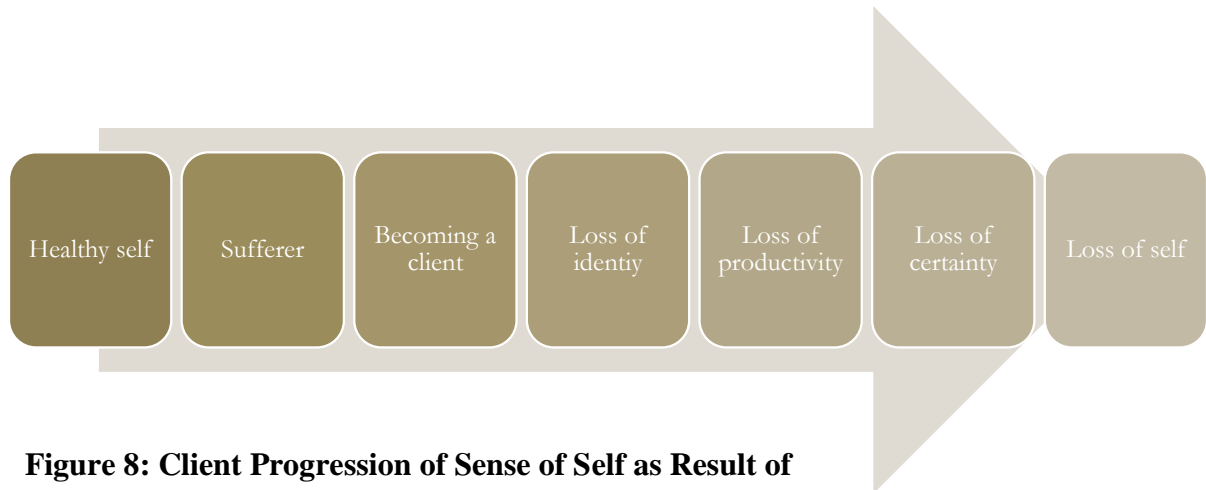


Figure 8: Client Progression of Sense of Self as Result of

Mental health issues as a result of rheumatoid arthritis

Pain, fatigue, and functional impairment can lead to psychosocial impairment. Screening should be conducted and symptoms should be monitored for regularly especially among those who are newly diagnosed. The following is a list of possible psychosocial impairments among those with RA

- Anxiety
- Depression
- Inability to concentrate
- Inability to participate or find enjoyment in daily activities
- Decreased self-esteem
- Decreased self-efficacy
- Negative self-image
- Helplessness

When a client presents with psychosocial impairment, building rapport and establishing a trusting relationship is essential to addressing psychosocial concerns. Having a healthy therapist-client relationship can enhance deeper communication allowing the occupational therapist to gain beliefs and understanding of illness-related aspects. This will give insight to determine appropriate interventions to best meet the mental health needs of the client.

Coping with Rheumatoid Arthritis

Coping describes an individual's ability to adapt to stress as a result of internal or external factors. For clients who present with psychosocial impairments, occupational therapists can facilitate relative mastery in the management of their chronic disease by introducing coping strategies and interventions

Problem-focused Coping

- Actively reducing the stressor or increasing the amount of coping strategies to effectively adapt to the stress.
- Focusing on the problem in order to eliminate or decrease the stressor.

Emotion-based Coping

- Addressing the emotional response or feelings associated with the stressors of RA.
- Dealing with anger, frustration, sadness, etc. in order to increase hope and satisfaction with life.

Interventions to address mental health issues

Through the awareness of different coping styles, occupational therapists can best match the client's preferred coping style with the appropriate strategies. It is also important to consider that a balance of both problem-based and emotion-based strategies may be appropriate for clients, as well.

Problem-focused Coping Strategies

- Energy conservation
- Joint Protection
- Pain Management
- Hand Splinting
- Environment Modification

Emotion-based Coping Strategies

- Deep Breathing
- Progressive Muscle Relaxation
- Journal Writing
- Guided Imagery
- Meditation

Adaptive Equipment

Rheumatoid Arthritis Occupational Therapy in Primary Care

Compensatory strategies are key interventions for clients diagnosed with RA. Following the principles of joint protection, adaptive equipment facilitates engagement in occupations by reducing the force and effort needed to participate. Because RA symptoms can lead to occupational dysfunction, adaptive equipment can increase client independence while decreasing pain and fatigue. Occupational therapists can recommend adaptive equipment by evaluating the client, finding an appropriate fit between the client and device, and providing training and education regarding safety and proper use of the recommended device.

Adaptive equipment sources:

- Eckloff, S. G., & Thornton, B. C. (2002). Prescribing assistive devices for clients with rheumatoid arthritis. *The Journal of Musculoskeletal Medicine*, 19(1), 27-34.
- Hammond, A. (2013). Rheumatoid arthritis, osteoarthritis, and fibromyalgia. In Radomski, M. V. & Trombly-Latham, C. A. (Eds.), *Occupational therapy for physical dysfunction* (7th ed.) (pp. 1215-1242). Baltimore: Lippincott, Williams, & Wilkins.
- Jepson, J., & Goodacre, L. (2013). Maintaining independence. In Goodacre, L. & McArthur, M. (Eds.), *Rheumatology practice in occupational therapy: Promoting lifestyle management* (pp. 111- 132). Chichester, West Sussex, UK: Wiley-Blackwell.

Recommendation Process of Adaptive Equipment (Eckloff & Thornton, 2002)

Step 1: Evaluation Process

- **Interview:** The goal of the interview is to obtain information about adaptation and relative mastery difficulties from the client's perspective. It also provides insight to the client's adaptive response behaviors. Questions to be asked in the interview include, but are not limited to:
 - What are the client's goals?
 - What is the client having difficulties doing/participating in?
 - What roles are impacted by these difficulties?
 - Is the client ready or willing to use adaptive equipment?
 - Has the client previously used adaptive equipment, and if so, what? Did these devices work?

- **Physical Evaluation:** The physical evaluation of the process assesses the client's performance skills and client factors that impact participation in occupation. The following are recommended to assess.
 - Grip strength
 - Pinch strength
 - Upper extremity manual muscle testing
 - Upper extremity range of motion
 - Pain; tenderness
 - Any noticeable deformities or presence of edema
 - Observation of occupational performance in daily tasks

Step 2: Adaptive Equipment Selection

- **Device Selection:** Consider the client's goals, needs, and wants, but also consider the cost of the item and his or her ability to afford the recommended items. There are multiple devices that facilitate independence in occupations.

- **Resources:** Devices can be purchased from multiple companies including those that specialize in adaptive equipment and commercial businesses like Amazon.com.
 - Patterson Medical Products, Inc. Professional Rehabilitation Catalog
 - ArthritisSupplies.com
 - Amazon.com

Feeding/Meal Preparation Adaptive Equipment		
Device	Purpose	Approximate Cost
Built-up Utensils	Minimizes finger joint range of motion promoting an easier grasp of knives, forks, spoons, etc.	\$ 10-15/utensil
Electric/Manual Jar Openers	Eliminates the force and range of motion needed in opening a jar.	\$8-35
Rocker knives & cutlery	Allows clients to use one hand while cutting and minimizes joint use and promotes distribution of force throughout larger joints.	\$15-35
Adapted cutting boards	These cutting boards contain raised corners or spikes, keeping food on the board eliminating the need for both hands during meal preparation tasks.	\$20-70
Universal cuff	Minimizes the use fine motor/dexterity skills by placing the cuff around the hand. Cuff has a place to slide in utensils.	\$15-40
Knob covers/turners	Minimizes the need for strong grip strength to turn knobs.	\$10-\$15
Jug/Kettle Tippers	Promotes easy pouring of food and drink from jugs, cartons, pots and pans eliminating the need to hold one or both items.	\$25-75

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Self-Care Adaptive Equipment		
Device	Purpose	Approximate Cost
Shower chair/bench	Allows clients to conserve energy during shower and bathing tasks.	\$65+ (chair) \$130+ (bench)
Hand-held shower heads	Brings water closer to body, allowing client to remain sitting during shower and bathing tasks.	\$20-70
Long-handled sponges/brush	Decreases range of motion needed to perform self-care and grooming tasks.	\$5-20
Dressing stick/reacher	Acts as a limb extender for clients with limited upper extremity and hip range of motion when donning pants.	\$5-30
Long-handled shoe horn	Acts as a limb extender for clients with limited upper extremity and hip range of motion with donning shoes.	\$5-15
Sock donner	Acts as a limb extender for clients with limited upper extremity and hip range of motion when donning socks.	\$10-30
Zipper pull/button	Allows clients to button and zip while	\$5-15

hook	minimizing finger joint range of motion and dexterity.	
Toilet riser (with & without safety frame)	Decrease distance to sit on toilet promoting decreased range of motion and energy conservation.	\$25-100

This table is the authentic work of the authors of this clinical guide: Nims, A., & Schumacher, K. Information in the table was adapted from the cited source.

Other Adaptive Equipment		
Device	Purpose	Approximate Cost
Extensions/Large gripped devices	Builds-up keys, pencils, knobs, handles, etc. to protect joints.	\$5-30
Carts on wheels	Allows clients to place items on the cart and roll them and eliminating the need to carry objects around the home.	Prices will vary.
Easy-lift chairs	Conserves energy by decreasing the range of motion to sit or stand.	Starting at \$500
Card holders	Eliminates those with limited pinch strength to place cards on the table.	\$5-10

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Step 3: Adaptive Equipment Training

- **Training:** After the device has been selected and ordered, it is important to provide instruction and training of the device to ensure safety and proper use.
 - Demonstrate proper use the adaptive equipment
 - Provide instruction on how to use and care for the device
 - Allow client to practice using the device.
- **Follow-up:** This final step allows occupational therapists to assess whether the device was an appropriate fit for the client.
 - Administer the Relative Mastery Measurement Scale to assess client's satisfaction with the new device.
 - Ensure the device has help decrease client symptomology and promoting engagement and independence in occupations.
 - If the client is unsatisfied, re-evaluate.

Upper Extremity Splinting

Rheumatoid Arthritis Occupational Therapy in Primary Care

Because of the degenerative and inflammatory symptomology associated with RA, the upper extremity is greatly impacted resulting in decreased range of motion, pinch and grip strength, pain, and deformities. Specifically, the wrist, metacarpal-phalangeal (MCP) joints, and/or the proximal inter-phalangeal (PIP) joints are primarily affected. Occupational therapists can address these structural changes by prescribing and fabricating wrist and hand splints in order to minimize symptoms. The goal of splinting includes reducing inflammation and pain, correctly positioning joints, and ultimately optimizing functional use of the hand for participation in daily occupations.

Splinting sources:

- Bradley, S., & Adams, J. (2013). Rheumatology splinting. In Goodacre, L. & McArthur, M. (Eds.), *Rheumatology practice in occupational therapy: Promoting lifestyle management* (pp. 190-205). Chichester, West Sussex, UK: Wiley-Blackwell.
- Hammond, A. (2013). Rheumatoid arthritis, osteoarthritis, and fibromyalgia. In Radomski, M. V. & Trombly-Latham, C. A. (Eds.), *Occupational therapy for physical dysfunction* (7th ed.) (pp. 1215-1242). Baltimore: Lippincott, Williams, & Wilkins.
- Jacobs, M. & Austin, N. (2003). Immobilization splints. In Jacobs, M. & Austin, N. (Eds.), *Splinting the hand and upper extremity: Principles and processes* (pp. 100-157). Baltimore, MD, Lippincott Williams & Wilkins.

Evaluation

Prior to selecting and fabricating a splint, a thorough evaluation of the client should be conducted. There are a number of aspects of the client that should be considered. The following provides a guideline of information that should be obtained prior to the selection of a splint.

- Diagnosis
- History of condition
- Medical history
- Occupational profile
- Prior and current level of function
- Client difficulties, wants, and goals
- Pain level
- Presence or absence of edema
- Presence or absence of sensation
- Range of motion
- Grip strength
- Pinch strength

Client Education

Before sending the splint home with your client, it is the responsibility of the occupational therapist to instruct the client on how to use and care for their splint. Providing a handout and explaining instructions will be beneficial and may help to increase client compliance. Topics that should be covered include:

- Provide information regarding the time of day and number of hours the splint should be worn.
- Education as to why the splint was prescribed, as well as its purpose must be stated.
- Information on how to care for the splint should be given. Many splints can be cleaned using cool, soapy water and rinsed with cool water.
- All clients should be given an at-home hand exercise program.
- Educate clients regarding precautions and to monitor the hand/wrist for differences in appearance, sensation changes, or pain and discomfort.
- Provide contact information, so the client is able to ask follow-up questions and inform you if problems arise.

Zigzag Deformity

Prolonged synovitis and inflammation causes increased ligament laxity, therefore promoting wrist instability and movement of the wrist and fingers. Zigzag deformity, a common deformity among those with RA, involves structural changes of the carpal bones and MP joints. Zigzag deformity results from a displacement of the ulna from the carpal bones causing radial deviation of the wrist. This deformation then leads to ulnar drifting of the MP joints. Zigzag deformity can be disabling, negatively impacting one's ability to participate in meaningful occupations. In order to minimize this deformity, a **resting hand splint** with added strapping during early onset of RA diagnosis can help to maintain functional use and decreased pain of the hand.

Table 11: Resting Hand Splint

Splint	Resting Hand Splint
Indications	Early onset RA with little to no radial deviation of the wrist and ulnar deviation of the MP joints.
Purpose	<ul style="list-style-type: none"> ▪ Prevents and/or minimizes zigzag deformity. ▪ Reduces inflammation by positioning the hand in an anatomically correct position. ▪ Provides volar support to the wrist, hand, and fingers with straps guiding the joints into an anti-deformity position.
Splint-Wear Schedule	Does not permit function hand use. Recommended to be worn at night.
Desired Position	Wrist should be placed into 10-15 degrees of extension and 10 degrees of ulnar deviation MP joints to be placed into full extension.
Fabrication Resources	<ul style="list-style-type: none"> ▪ Jacobs, M. & Austin, N. (2003). Immobilization splints. In Jacobs, M. & Austin, N. (Eds.), <i>Splinting the hand and upper extremity: Principles and processes</i> (pp. 100-157). Baltimore, MD, Lippincott Williams & Wilkins. ▪ North-West Rheumatology Occupational Therapy Research Group http://www.cot.co.uk/sites/default/files/ss-rheumatology/public/Resting-Splint-Guidelines.pdf

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Zigzag Deformity (continued)

Due to the involvement of the carpal bones, ulna, and radius, a **volar wrist immobilization splint** may be beneficial for clients to minimize movement of the wrist promoting rest and protection of the involved structures.

Table 12: Volar Wrist Immobilization Splint

Splint	Volar Wrist Immobilization Splint
Indications	Early onset RA diagnosis. Client reports pain and presents with inflammation of the wrist.
Purpose	<ul style="list-style-type: none">▪ Provides stability to the wrist, ulna, and radius.▪ Reduces inflammation by positioning the hand in an anatomically correct position.▪ Provides volar support to the wrist to allow joints to rest.
Splint-Wear Schedule	Recommended to be worn during periods of exacerbation during the day and at night.
Desired Position	Position of comfort for the client. Optimal position is 0-10 degrees of wrist extension if the deformity allows.
Fabrication Resources	<ul style="list-style-type: none">▪ Jacobs, M. & Austin, N. (2003). Immobilization splints. In Jacobs, M. & Austin, N. (Eds.), <i>Splinting the hand and upper extremity: Principles and processes</i> (pp. 100-157). Baltimore, MD, Lippincott Williams & Wilkins.▪ North Coast Medical, Inc. http://www.ncmedical.com/wp-content/uploads/2011/07/Thumb-Hole-Cock-Up_11_web.pdf▪ This splint is also known as a static wrist splint. Prefabricated splints can be purchased from rehabilitation catalogs or local pharmacies.

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Swan-Neck Deformity

Swan-neck deformity is characterized by hyperextension of the PIP joints and flexion of the distal interphalangeal (DIP) joints. Synovitis of PIP joints leads to contracture of the intrinsic musculature of the hand, which subsequently pulls on the PIP extensor mechanism leading to hyperextension. In regards to the DIP joint, synovitis of this joint causes rupture of the extensor tendon ultimately resulting in flexion.

Table 13: PIP Extension Block Splint

Splint	PIP Extension Block Splint
Indications	PIP hyperextension DIP flexion Joints must be passively correctable.
Purpose	<ul style="list-style-type: none">▪ Blocks hyperextension and promotes stability of the PIP joint.▪ Encourages near to full flexion of the PIP joint.
Splint-Wear Schedule	Start to wear the splint for one hour. Check for areas of pressure and increase wear to as tolerated by the client.
Desired Position	Slight flexion of the PIP joint.
Fabrication Resources	<ul style="list-style-type: none">▪ Jacobs, M. & Austin, N. (2003). Immobilization splints. In Jacobs, M. & Austin, N. (Eds.), <i>Splinting the hand and upper extremity: Principles and processes</i> (pp. 100-157). Baltimore, MD, Lippincott Williams & Wilkins.▪ North Coast Medical & Rehabilitation Products https://www.ncmedical.com/item_1749.html▪ Vancouver Coastal Health http://www.arthritis.ca/document.doc?id=557

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Boutonniere Deformity

Another common deformity among individuals with RA is Boutonniere deformity. This is characterized by flexion of the PIP joint and hyperextension of the DIP. This structural deformity is a result of PIP synovitis migrating between the lateral bands and displacing them below the axis of the PIP joint, ultimately acting as a PIP flexor rather than an extensor. The fabrication of a PIP immobilization splint is indicated to promote full PIP extension.

Table 14: PIP Immobilization Splint

Splint	PIP Immobilization Splint
Indications	PIP flexion DIP hyperextension Joint must be passively correctable.
Purpose	<ul style="list-style-type: none"> ▪ Promotes gentle PIP joint extension. ▪ Reduces PIP flexion contracture.
Splint-Wear Schedule	Encouraged to be worn at night.
Desired Position	Position for comfort. Optimal positioning is zero degrees.
Fabrication Resources	<ul style="list-style-type: none"> ▪ Jacobs, M. & Austin, N. (2003). Immobilization splints. In Jacobs, M. & Austin, N. (Eds.), <i>Splinting the hand and upper extremity: Principles and processes</i> (pp. 100-157). Baltimore, MD, Lippincott Williams & Wilkins.

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Synovitis of the can also lead to Boutonniere deformity of the thumb, which is characterized MP flexion and IP extension. This prolonged inflammation of the synovial membrane causes a stretching of the extensor pollicis longus tendon displaces ulnarward and volarly. In this instance, a neoprene thumb and wrist splint is indicated to bring the thumb into abduction and extension. It is also important to note that this splint can be extended to include immobilization of the wrist if the client presents with pain and inflammation of the wrist, as well.

Table 15: Thumb Immobilization Splint

Splint	Thumb Immobilization Splint
Indications	MP flexion and IP extension of the thumb. Joint must be passively correctable.
Purpose	<ul style="list-style-type: none"> ▪ Promotes thumb abduction and extension. ▪ Decreases pain and joint inflammation.
Splint-Wear	Encouraged to be worn at nightly and as tolerated during the day.

Schedule	
Desired Position	Position for comfort.
Fabrication Resources	<ul style="list-style-type: none"> ▪ Jacobs, M. & Austin, N. (2003). Immobilization splints. In Jacobs, M. & Austin, N. (Eds.), <i>Splinting the hand and upper extremity: Principles and processes</i> (pp. 100-157). Baltimore, MD, Lippincott Williams & Wilkins. <p>Note: This splint can be extended to include immobilization of the wrist if the client presents with pain and inflammation of the wrist, as well.</p>

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Physical Agent Modalities

Rheumatoid Arthritis Occupational Therapy in Primary Care

The use of physical agent modalities as an adjunct to occupation-based interventions can be extremely helpful for symptom relief. This increases client ability to participate in meaningful daily activities by improving areas of pain, stiffness, and joint range of motion.

While there are many types of physical agent modalities to choose from, there are several that have been shown effective for relieving RA symptoms, specifically. Those include low level laser therapy, therapeutic ultrasound, thermotherapy, electrical stimulation, cryotherapy, and transcutaneous electrical nerve stimulation. Each of these has been highlighted to explain their purpose, efficacy, and benefits and drawbacks of use.

Physical agent modalities resources:

Bracciano, A. G. (2008). *Physical agent modalities: Theory and application for the occupational therapist*. Thorofare, NJ: SLACK.

Brosseau, L., Welch, V., Wells, G., Bie, T., Gam, A., Harman, K., ... Tugwell, P. (2005). Low level laser therapy for treating rheumatoid arthritis. *Cochrane Database of Systematic Reviews* 2005, 4, 1-93. doi: 10.1002/14651858.CD002049.pub2

Krabak, B., & Minkoff, E. (2012, July 31). Rehabilitation management for rheumatoid arthritis clients. John Hopkins Arthritis Center. Retrieved from <http://www.hopkinsarthritis.org/client-corner/disease-management/rehabilitation-management-rheumatoid-arthritis-clients/>

Lower Level Laser Therapy (LLLT)

Purpose: LLLT is used as a non-drug treatment to relieve pain and swelling without producing heat. Instead it a laser emits light that causes light and chemical reactions in certain targeted cells. It can produce an analgesic effect within its area of use while increasing synovial membrane fibroses and increased protein synthesis of synovial cells, which help to regenerate the synovium of joints.

Possible Benefits:

- Effective for reducing pain, especially in areas of foot, knee, and hand
- Reduces morning stiffness
- Resulted in anti-inflammatory and analgesic effects
- Increases ROM
- Increased function
- Increased walking speed
- Finger flexibility (finger to palm distance)
- Increase hand flexibility

Drawbacks:

- Does not appear to have long-term benefits
- Most studies using LLLT are on the hand, so the possible benefits of using it on other parts of the body are not as well known

Therapeutic Ultrasound

Purpose: the use of ultrasound facilitates the soft tissue healing process, speeds recovery, and decreases pain. The thermal effects of ultrasound can additionally reduce muscle spasms. Thermal effects also cause vasodilation, which can improve chronic inflammatory cells.

Possible Benefits:

- Can reduce total number of painful
- Improved grip force
- Improved finger joint circumference
- Improved morning stiffness
- Improved hand function
- Improved pain especially when performed on the hand in water
- Found more beneficial when used with chronic RA in comparison to individuals with acute musculoskeletal conditions
- May benefit joint contractures and bursitis
- Increases enzymatic activity which stimulates the immune system
- Can reach tissue depths greater than 2cm below skin surface

Drawbacks:

- Cannot be used during the acute inflammatory phase
- Can result in adverse bodily reactions if not applied properly

Thermotherapy

Examples: hot packs, paraffin wax, hydrotherapy

Purpose: Thermotherapy, through the use of superficial heat transfer in various forms can help to facilitate soft tissue healing. It can also reduce muscle spasms and reduce joint stiffness. Bringing heat to tissues helps to increase cell metabolism and blood flow that can help muscle move better for use with functional activities.

Benefits:

- Rapid to administer
- Improved swelling and inflammation
- Improved joint circumference
- Improved morning stiffness
- Improved grip force
- Portable
- Paraffin wax combined with therapeutic exercises shown to decrease pain, non-resisted motion, ROM, and stiffness

Drawbacks:

- Cannot use during the very acute phases of inflammation
- Effects only reach depths of 1-2 cm below surface of the skin

Cryotherapy

Examples: cold packs, ice massage, vapocoolant sprays, whirlpool

Purpose: Superficial cold is used to effectively lower the temperature of bodily tissue. It has been shown to slow nerve conduction velocity and decrease firing of muscle spindles, which can reduce muscle spasticity. Cold can additionally help decrease inflammation when RA symptoms are in an acute phase.

Benefits:

- Reduces muscle spasticity
- Decreases acute inflammation
- Relief of muscle spasms
- Can improve muscle spasms
- Delays onset of muscle soreness after activity
- Can improve acute and chronic pain secondary to muscle spasms
- Improves acute swelling

Drawbacks:

- Can only reach tissue depth of 1-2 cm
- Use of cold can result in temporary increase in blood pressure
- Cannot be used with clients that have impaired circulation or sensitivity to cold

Therapeutic Ultrasound

Example: Neuromuscular Electrical Stimulation (NMES)

Purpose: Electrical stimulation uses alternating electric currents to stimulate specific motor responses. Clinically it is beneficial to reduce muscle spasms, increase muscle strength, and to reduce edema.

Possible Benefits:

- Portable
- Helps to increase muscle recruitment
- Shown to have positive effects on muscle force and endurance
- Can maintain or increase active range of motion (AROM) and strength
- Minimize loss of joint mobility
- Enhances muscle performance
- Helps to modulate pain
- Can be used to effectively stimulate wound healing

Drawbacks:

- Decreased efficacy with obese clients (unable to reach underlying tissues to produce results)
- Unable to use over areas with underlying muscle pathology

Transcutaneous Electrical Nerve Stimulation (TENS)

Purpose: TENS is used as an electrical stimulation for pain control. Conventional TENS is typically used during the acute stages of injury but can also be effective in reducing chronic pain. This is possible due to an influence of pain transmission from the level of electrical stimulation.

Possible Benefits:

- Pain relief at rest
- Acute and chronic pain relief
- Improved grip force
- Reduction of joint tenderness
- Pain reduction seen most when used on hand/wrist

Drawbacks:

- Conventional TENS application was preferred over acupuncture-like TENS
- Pain relief is usually short duration, however may last up to an hour after treatment
- If used frequently, pain threshold may be changed while the stimulation is on. This could increase risk for injury or overuse.

Exercise

Rheumatoid Arthritis Occupational Therapy in Primary Care

The use of exercise as an intervention for clients with rheumatoid arthritis has been met with hesitation by many occupational therapists. This is due to the belief that strenuous activity in the form of exercise may exacerbate symptoms of rheumatoid arthritis or cause additional symptoms of fatigue, soreness, and pain. The use of exercise has been shown to be extremely beneficial to increase the health and improve symptoms of clients at any stage of rheumatoid arthritis, whether experiencing a period of remission or during a flare up. Some of the most common myths regarding exercise in this setting are addressed, in addition to highlighting some of the most beneficial types of exercises available to use with future clients. Examples of exercises in each main category are also provided with suggestions for how to obtain successful results when using exercise as an intervention.

Exercise source:

Cooney, J., Law, R., Matschke, V., Lemmey, A., Moore, J., Ahmad, Y., Jones, J., ... Thom, J. (2011). Benefits of exercise in rheumatoid arthritis. *Journal of Aging Research*, 1-14. doi: 10.4061/2011/681640

Current myths regarding exercise for rheumatoid arthritis

Prior to the past few years in research, it was believed that exercise, whether mild or intense, could result in exacerbated symptoms for clients with rheumatoid arthritis. Cooney et al. (2011) found through a comprehensive literature review that many beliefs about exercise for RA were false. Here are some of the most common myths explained.

1. A low level of physical activity is irreversible.

- Even at severe stages, low levels of activity can be completed and result in significant benefits.

2. Clients with RA should complete less exercise vs. healthy individuals because of their symptoms.

- Currently 80% of clients with RA complete less exercise vs. healthy individuals; however exercise is shown to be beneficial at any point in disease progression.

3. Strengthening should only be completed during the beginning stages of RA.

- As RA progresses, loss of strength can increase. It becomes imperative for clients to use strengthening exercises to gain back muscle mass and continue to complete functional activities.

4. Lack of physical activity will not increase risk for further disease complications.

- RA is associated with increased mortality from cardiovascular disease in and myocardial infarctions. Regular exercise decreases these risks.

5. Regular exercise can be harmful to joints already suffering from inflammation and deformities.

- Exercise can improve tendon stiffness, range of motion, and flexibility in all joints.

Beneficial exercises for clients with rheumatoid arthritis

Exercise, no matter the type, is shown to be beneficial in the treatment and maintenance of rheumatoid arthritis. Types of exercises have been broken down into categories of aerobic training, resistance training, a combination of aerobic and strengthening exercises, and general exercise. Table 3 highlights the kinds of exercises associated with each type, benefits of each, and the general recommended guideline parameters for how best to achieve positive results within that category.

Table 16: Exercises for Rheumatoid Arthritis

Category of Exercise	Exercise Examples	Benefits	How Best To Achieve Results
Aerobic Training	<ul style="list-style-type: none"> ▪ Walking ▪ Running ▪ Cycling ▪ Water aerobics ▪ Aerobic dance 	<ul style="list-style-type: none"> ▪ Improves aerobic fitness ▪ Reduces risk of cardiovascular disease ▪ Works large muscle groups ▪ Improves muscle strength ▪ Improves joint mobility ▪ Reduces joint tenderness ▪ Improve range of motion ▪ Improvements in areas of depression, anxiety, and fatigue ▪ Will not deteriorate RA disease activity 	<ul style="list-style-type: none"> ▪ 60%-80% of heart rate (HR) max ▪ 30-60 min/sessions ▪ 3-5 days per week ▪ Increase duration and intensity over time
Resistance Training	<ul style="list-style-type: none"> • Exercises with weights • Weight machine use • Theraband use • Resistive daily activities • Adding weights to commonly performed activities 	<ul style="list-style-type: none"> • Improve muscle hypertrophy • Strengthen muscles • Increase in muscle mass • Reduction in fat mass • Increased physical functioning • Reduced inflammation • Improved morning stiffness • Improved disease activity • Can improve well-being without increasing disease activity 	<ul style="list-style-type: none"> • 60%-80% one rep max (IRM) • 8-10 exercises of larger muscle groups • 8-12 reps of exercise at 2-3 sets • 2-3 days per week • Increase intensity over time
Aerobic/Strength Combination	<ul style="list-style-type: none"> • Tai Chi exercises • Yoga/Pilates • Using combination of exercises outlined above 	<ul style="list-style-type: none"> • Improve cardiovascular health • Improve joint health issues • Increases physical functioning • Improves abilities to perform ADLs 	<ul style="list-style-type: none"> • 10-15 minutes per day • 2 days per week

<p>General Exercise</p>	<ul style="list-style-type: none"> • Incorporating the above exercises into daily life activities • Home-based exercise programs • Adding weights or repetitions to functional activities 	<ul style="list-style-type: none"> • Improve inflammatory “flare ups” • Increased mobility • Improved pain • Improved joint pain 	<ul style="list-style-type: none"> • Begin at a lower intensity and then increase
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Types of therapeutic exercise for clients with rheumatoid arthritis

The amount and type of exercise that each client can handle will vary greatly from person to person. While some types of exercises are suggested in each category in Table 16, there are some that are provided in Appendix B. The exercises included cover active and resistive exercises working the same areas. Exercise pictures used are provided using the VHI Computer Exercise Program. Included are specific exercises for the forearm, wrist, hand, fingers, scapula, and shoulders.

Suggested amount of exercise

Some suggestions for exercise parameters have been provided within Table 16. It is recommended that any level of exercise is better than no exercise at all. For those clients whose symptoms are severe, start with low intensity exercises for short periods of time and slowly build up intensity and duration. Even when symptoms are at their worst during a flare up, exercise is still beneficial and shouldn’t be avoided.

Surgical Interventions

Rheumatoid Arthritis Occupational Therapy in Primary Care

Occupational therapy treatment goals for clients with rheumatoid arthritis may focus on the restoration of function and decreasing pain of joint involvement for the hands and wrists. Wrist involvement is seen in 50% of clients within two years of being diagnosed while 90% of clients experience this within 10 years of being diagnosed. Conservative treatment in the form of occupational therapy is recommended in order to correct and prevent future deformities of the hand and wrist. However, surgery is indicated when the symptoms of pain and refractory synovitis continue for more than six months.

It is very important that occupational therapists properly educated their clients on the indications for surgery in addition to the most common types of surgery performed with rheumatoid arthritis, and finally what rehab will look like post-surgery. Information regarding the main types of surgical interventions found with the most common types of deformities and symptoms seen with rheumatoid arthritis is provided. While this isn't a comprehensive list of the possible types of surgery, it is important to open the door with clients and have positive communication regarding their care.

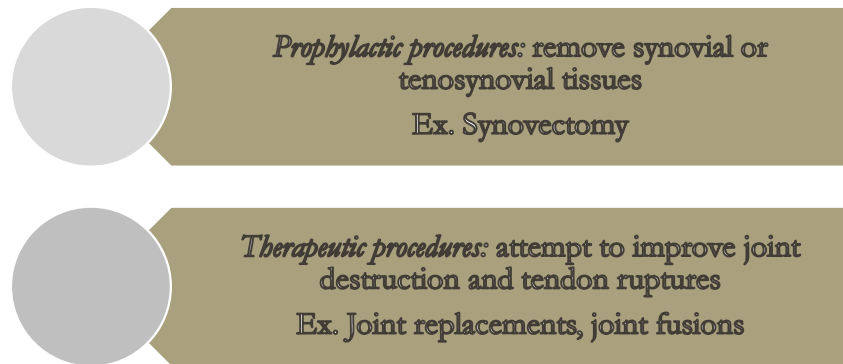
Surgical intervention source:

Chim, H., Reese, S., Toomey, S., & Moran, S. (2014). Update on the surgical treatment for rheumatoid arthritis of the wrist and hand. *Journal of Hand Therapy*, 27(2), 134-142. doi: 10.1016/j.jht.2013.12.002

Surgical Interventions

Surgical interventions for rheumatoid arthritis can be categorized into *prophylactic* and *therapeutic* procedures.

Figure 9: Categories of surgical interventions



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Surgeries for the Wrist

- **Synovectomy and Tenosynovectomy**
 - These are done to remove joint tissues that are inflamed (also called synovium) that cause individuals pain or limitations in range of motion.
 - These types of procedures are most often indicated during early stages of rheumatoid arthritis, when clients have moderate swelling and mild limitations in joint movement not improved by the use of medications or conservative occupational therapy.
 - Often clients will experience symptoms of carpal tunnel syndrome from increased pressure on the median nerve due to tissue inflammation.
 - It can help to prevent future tendon ruptures and preserve ligament functioning.

Possible Post-operative Benefits:

- Decreased pain
- Improved wrist/hand function
- Increased grip strength
- Increased range of motion

▪ **Distal Radioulnar Joint (DRUJ)**

- Rheumatoid arthritis can often affect the DRUJ, as tenosynovitis can affect the extensor carpi ulnaris (ECU) function. The distal ulna can experience instability in addition to subluxation.
- The procedure most commonly used for these symptoms include a resection of the head of the ulna.
- Another common procedure for the wrist joint includes an ulnar head arthroplasty, which involves replacing the head of the ulnar.

Possible Post-operative Benefits:

- Elimination of radio-ulnar impingement
- Improved wrist/hand function
- Enhanced radio-ulnar joint stability

▪ **Radiocarpal and Midcarpal Joints**

- When rheumatoid arthritis symptoms have progressed past a moderate stage and wrist symptoms continue to include pain, limited range of motion leading to reduced daily hand functioning, total wrist arthrodesis or arthroplasty may be considered.
- These procedures can include partial or complete joint fusion of the wrist or a replacement of the wrist joint as a whole.
- While wrist arthrodesis is considered helpful for decreasing pain, fusing part of the wrist together results in limited motion.

Possible Post-operative Benefits:

- Preserving wrist motions
- Slows disease progression
- Preserves bone stock
- Relieves pain
- Increase in grip strength

Surgeries for the Fingers

▪ **Metacarpophalangeal joints (MCP)**

- Rheumatoid arthritis can result in volar subluxation of the proximal fingers in addition to ulnar drifting at the level of the MCP joints.
- Symptoms which indicate a need for surgical interventions at the level of the MCP joints include: an inability to extend the fingers, loss of grip, finger pain, swelling, and an inability to form a pinch grasp with the index or middle finger with the thumb.
 - These procedures can include partial or complete joint fusion at the level of the MCP joint or a replacement of the entire joint.
- Synovectomy of these joints has been found to be helpful in reducing pain, swelling, and slowing disease progression.

Possible Post-operative Benefits:

- Prevention of further finger subluxation
- Correction of ulnar drift of the MCP joints resulting in improved appearance and function of the fingers
- Decreased tension on finger ligaments and tendons
- Increased grip and pinch strength
- Improved
- Overall improved hand function

▪ **Proximal Interphalangeal (PIP) and Distal Interphalangeal Joints (DIP)**

- Rheumatoid arthritis can also manifest severe symptoms in the distal PIP and DIP joints of the fingers. Depending on the level of severity, joints can result in a flexible or fixed deformity. These symptoms create deformities commonly known as a boutonniere or swan-neck deformity.
 - **Boutonniere deformity:** results in hyper-flexed PIP joint and a hyperextended DIP joint
 - **Swan-neck deformity:** results in a hyperextended PIP joint and a hyper-flexed DIP joint and results in the inability to make a full fist.
- Possible surgical interventions for PIP/DIP deformities:
 - Synovectomy of the PIP joint
 - Terminal extensor tenotomy
 - Reconstruction/ reposition of the central slip and lateral bands
 - Soft tissue reconstruction

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Appendices

Appendix A

Permission to use Visual Health Information Software Handouts

Appendix B

Visual Health Information Upper Extremity Exercise Handouts

Appendix C

Visual Health Information Joint Protection Handouts

CHAPTER V

SUMMARY

The need for chronic disease management has steadily been growing for the U.S. population. To address this need, primary care services have been expanding to cover this area. As the needs of this population are great, occupational therapists are well equipped to step into this area and offer services as a primary care provider in partnership with physicians. The problem remains that while prepared to step in and fulfill this role; occupational therapists are currently being under-utilized. The purpose of this scholarly project was to create a clinical guide for occupational therapists to use in an attempt to bridge the gap in furthering communication with primary care physicians. Additionally, this guide will show the value of occupational therapy and create successful partnerships in the treatment of rheumatoid arthritis (RA).

Based upon the model of Occupational Adaptation (Schkade & Schultz, 2003), this clinical guide offers a comprehensive framework for occupational therapists to utilize in the holistic treatment of clients with RA as a primary care provider. It includes an overall introduction to rheumatoid arthritis followed by related and useful occupational therapy assessment tools and subsequent interventions. These interventions cover the areas of successful self-management, joint protection, energy conservation, pain management, medication management, mental health, adaptive equipment, upper extremity splinting principles, the use of physical agent modalities, therapeutic exercise, and surgical interventions.

While there are several benefits to the use and implementation of this clinical guide, there are some co-occurring limitations. The target population for this clinical guide is narrowed to that of clients over the age of 18 diagnosed with rheumatoid arthritis. While several other rheumatic diseases may present with similar symptoms and areas of this guide may be applicable to treatment of those individuals, this entire guide cannot be applied to multiple diagnoses. In addition, another limitation of this guide was that the emergence of occupational therapists into the area of primary care is fairly new. This could potentially result in hesitancy to use this guide and implement it into this emerging area by entry-level occupational therapists.

This project is intended for use by occupational therapists as members of an interdisciplinary health care team in the area of primary care. Occupational therapists will use this as a guide to further communication with physicians about the possibilities of the role of occupational therapy in this area to extend and improve services for chronic disease management for persons with RA. This clinical guide will be used as a resource for occupational therapists to reflect on the various needs to address when working with the client population of those diagnosed with RA. It will provide overall education for clinicians about rheumatoid arthritis and equip them with a variety of valid and reliable assessments to use that cover many different environments and needs. The guide is very comprehensive, as it covers several areas of need including physical and psychosocial aspects of chronic disease management. The guide has been created based on the model of Occupational Adaptation (Schkade & Schultz, 2003), so additionally it will provide occupational therapists with model-driven assessments and interventions to use with clients. While the overall goal of Occupational Adaptation is to increase the level of each

client's internal adaptation process, this guide is focused on giving clinicians resources and strategies to provide to clients to increase their self-management (Schkade & Schultz, 2003). This clinical guide offers further information and occupational therapy intervention possibilities in the areas of adaptive equipment, upper extremity splinting, physical agent modalities, therapeutic exercise, and knowledge of helpful surgical interventions.

It is concluded that this clinical guide will be used to bridge the gap between the need for further services in the area of primary care, chronic disease management, and the skills that occupational therapists' possess to cover this area of need. The guide will also be used to further communication between occupational therapy and skilled physicians treating clients with RA to improve the efficacy of interdisciplinary teams.

As an emerging area of practice for occupational therapy, additional research is needed to better explain how therapists can step into this role and be successful as a primary care provider. The research utilized for this literature review was largely based upon occupational therapy journals and evidence from countries outside of the United States. Additional information and research on the efficacy of occupational therapy for clients with rheumatoid arthritis in the U.S. healthcare system would be beneficial to supplement the material provided in this clinical guide. In the future, it is the hope that this clinical guide will be distributed to various facilities that could benefit to determine its effectiveness and to advocate for the role of occupational therapy within the area of primary care. Finally, this guide will be utilized to communicate additionally with physicians about how occupational therapy is well suited to step into this role.

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