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A Protocol for Animal Assisted Therapy in a Midwestern Hospital

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A PROTOCOL FOR ANIMAL ASSISTED THERAPY IN A MIDWESTERN HOSPITAL

by

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Master of Occupational Therapy, University of North Dakota, 2015

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This Scholarly Project Paper, submitted by Alexie J. Traiser and Katie J. Huot in partial fulfillment of the requirement for the Degree of Masters 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

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ABSTRACT

Animal Assisted Therapy (AAT) has been shown to improve physiological, psychological, social, and physical aspects of clients (Miller & Ingram, 2000; Diefenbeck, Bouffard, Matukaitis, Hastings & Coble, 2010). AAT increases an individual's strength, cognition, range of motion, and balance (Miller & Ingram, 2000). The use of animals within therapy also decreases anxiety, heart rate, blood pressure, and pain while also improving attention and social participation (Diefenbeck et al., 2010). The role of animals within AAT provides the therapist with a unique tool to utilize in various aspects of therapy. Depending on the treatment plan, the therapist can utilize the animal in various ways in order to match the client's physical or psychological needs. Treatment plans that utilize AAT to improve the client's well-being, socialization, and activities of daily living have been proven to be effective through the use of walking, feeding, brushing, petting, and bathing the animal (Barak & Mavashev, 2001). Along with clients receiving benefits from AAT, therapy staff has also indicated benefits including increase in self-awareness, improved morale, and stress reductions as result of using animals as a tool for therapy (Rossetti, DeFabiis & Belpedio, 2008). Benefits of incorporating AAT into therapy have been documented throughout the literature, however, there are limited facilities in the Midwest that implement AAT and existing protocols have been written for recreational animal visits rather than goal directed therapy (Winkle & Jackson, 2012).

An extensive literature review on the benefits and contraindications of AAT, the role of the interprofessional team using AAT, AAT policies and procedures, and implementation of an

AAT program was conducted. Staff members at a Midwestern hospital interested in incorporating AAT into therapy also provided suggestions to the creation of this protocol.

The purpose of this scholarly project was to provide occupational therapists and other health care professionals with a protocol for implementation of an AAT program into a neurological rehabilitation facility. The protocol includes an introduction to AAT, benefits of AAT, AAT incorporated into the occupational therapy practice framework, authorized AAT users, skills competency, policies and procedures, AAT requirements and eligibility, and an intervention guide for utilizing AAT.

CHAPTER I

INTRODUCTION

The number of pet owners in the United States has tripled since 1970 and is continuously growing. According to the Humane Society of the United States (2014), approximately 62% of households are current pet owners with an estimated total of over 164 million individuals caring for pets. Each year, more than one million individuals are impacted by an animal incorporated into therapy sessions (Pet Partners, 2012). These therapy interactions occur within hospitals, rehab centers, nursing homes, schools, home environments, and in the community impacting toddlers to seniors. The individuals impacted by this increasingly popular therapy intervention include those with Alzheimer's, mental illness, physical disabilities, autism, and neurological disorders. The use of animals as a means of therapy fosters physical, social, psychological, and physiological benefits for all ages. The purpose of this scholarly project is to provide occupational therapists and other health care professionals with a protocol for a neurological rehabilitation unit to implement animal-assisted therapy (AAT) into an interprofessional team context.

Research shows that the use of animals within therapy improves physiological, psychological, social, and physical aspects of clients (Diefenbeck, Bouffard, Matukaitis, Hastings & Coble, 2010; Miller & Ingram, 2000). The role of animals within AAT provides the therapist with a unique tool to utilize in various aspects of therapy, including

treatment planning, where the clinician can match the client's physical, social or psychological needs. This allows the client to gain functional abilities needed for a safe return home. Along with clients receiving benefits from AAT, therapy staff has also indicated benefits including increase in self-awareness, improved morale, and stress reductions as result of using animals as a tool for therapy (Rossetti, DeFabiis & Belpedio, 2008).

The following chapter provides an extensive review of the literature, the benefits and contraindication of AAT, as well as interdisciplinary approaches with an emphasis on the role of occupational therapy. Chapter three includes a description of the methodology used when designing the protocol as well as the steps involved. Chapter four explains the purpose, layout of the protocol structure, and intent of the protocol, as well as the model that supported the development. Included in the appendix is the complete user friendly protocol to assist a multidisciplinary team in implementing an AAT program as well as a means to measure outcomes. This protocol will include the purpose, the foundational requirements and knowledge to implement an AAT program, possible interventions to incorporate into therapy, as well as a program evaluation to measure outcomes. Finally, chapter five provides a summary of this scholarly project, the limitations of the protocol, proposals for implementation, along with recommendations for future research.

CHAPTER II

REVIEW OF LITERATURE

Healthcare facilities have incorporated the trend of complementary therapies into the mainstream of health care resulting in animal-facilitated therapies becoming a popular interest for the health care team. The use of animals, within therapy settings, can be integrated into a patient's plan of care to aid in healing patients holistically (Matuszek, 2010). This holistic approach can provide assistance and offer independence to the patients who utilize this form of treatment modalities (National Rehabilitation Information Center, 2013). This literature review addresses key terminology, the benefits, and drawbacks to incorporating AAT in a rehabilitation unit focused on patients with neurological issues. In addition it will address existing literature for therapies commonly involved in providing AAT.

Animal-Assisted Activities Versus Animal-Assisted Therapy

Past and current literature have suggested that the use of animals can be beneficial for individuals in a variety of settings, however, most existing protocols have been written for recreational visits rather than for goal directed therapy (Winkle & Jackson, 2012). Recreational visits are also known as animal-assisted activities (AAA) which allow for educational, motivational, therapeutic, and/or recreational benefits to increase quality of life (Pet Partners, 2012). During AAA, no specific goals or timelines are established as it is a spontaneous pet visitation between the animal and individual. The

session is not specific or tailored to the individual's needs or diagnosis, as the content of the session is not controlled. This interaction is provided by specially trained professionals, paraprofessionals, and/or volunteers in a wide variety of settings (Pet Partners, 2012).

This scholarly project is focused on the use of animals in goal directed therapy, otherwise known as animal-assisted therapy (AAT). This form of therapy supports development in social, emotional, physical, and/or cognitive functioning (Pet Partners, 2012). The interventions meet specific treatment criteria, are formally documented to measure progress, meet specific guidelines as well as timelines, and are provided within the scope of practice of a health/human service professional with specialized expertise (Pet Partners, 2012).

AAT sessions have physical, mental health, educational, or motivational goals to be addressed whereas, AAA interactions are not controlled and are solely for visitation purposes to improve one's quality of life. The goals addressed in AAT included improving fine motor coordination, balance/gait training, promoting self-esteem, and increasing social interactions. Typically, AAA sessions consist of demonstrations as well as opportunities to "play" with the animal (Pet Partners, 2012).

Throughout the literature review, it was noted that the terminology for AAT has been used interchangeably with pet therapy, pet facilitated therapy, animal therapy, and animal-assisted interventions. For the purposes of this literature review, the term AAT will primarily be used to reference the use of animals in goal directed therapy interventions.

Benefits of Animal Incorporation

There is emerging literature on the benefits and effects that animals provide humans. Much of the research literature focuses on animal visitations or AAA instead of the goal-directed therapy that occupational therapists and other related healthcare professionals provide. The results of the studies utilizing AAA can be applicable to and incorporated into AAT treatment interventions. The physiological, psychological, physical, and social benefits are outlined in further detail in the following literature review.

Physiological

It has been proven that animals can offer various physiological benefits. Animals have the ability to decrease heart rate, blood pressure, and neurohormone levels (Allen, Blascovich, & Mendes, 2002; Cole, Gawlinski, Steers, & Kotlerman, 2007; Kaminski, Pellino, & Wish, 2002). It has been recognized that animals can also reduce anxiety, phobias, aggression, and stress (Barker, Knisely, McCain, & Best, 2005; Cole et al., 2007; Kanamori et al., 2001; Wu, Niedra, Pendergast, & McCrindle, 2002). Animals increase oxytocin which is a hormone that has shown to have a relaxing or calming effect (Miller et al., 2009; Nagasawa, Kikusui, Onaka, & Ohta, 2009).

In a study done by Cole, Gawlinski, Steers, and Kotlerman (2007), 76 participants with advanced heart failure were assigned to one of three groups in which they either received a 12 minute visit from a volunteer and dog, only a volunteer, or 12 minutes of usual care. Cole et al. (2007) discovered that the 12 minute visitation from the dog resulted in significant decreases in blood pressure during and after treatment. The group who received the visit from the dog also had significantly greater declines in epinephrine

and norepinephrine levels during and after treatment (Cole et al., 2007). The significant declines in these two hormones are responsible for a decrease in anxiety, panic attacks, depression, and chronic pain. At the end of the study, the dog visitation group had the highest decrease in anxiety compared to the baseline score (Cole et al., 2007). The decrease in anxiety was also discovered in a study completed by Kanamori et al. (2001). Using behavioral pathology in Alzheimer's disease or the Behave-AD assessment, Kanamori et al. (2001) found the scores for anxieties and phobias were decreased in the group of participants who received AAT while the control group scores increased compared to baseline.

Wu, Niedra, Pendergast, and McCrindle (2002) completed a study with cardiology patients and discovered that AAT can be both relaxing and stimulating. Relaxation was more common in participants once rapport was built between the dog and the patient, however, stimulation had its positives as well (Wu et al., 2002). As rapport was built, the participant's respiratory and heart rates declined suggesting that the animals provided the patients with relaxation and decreases in stress (Wu et al., 2002). Miller et al. (2009) and Nagasawa, Kikusui, Onaka, and Ohta (2009) assessed relaxation after contact with animals by studying oxytocin levels. Dogs have the ability to increase oxytocin and therefore provide calming effects through physical contact (Miller et al., 2009; Nagasawa et al., 2009).

Reduced stress and increased relaxation have positive effects on a person's immune system. Charnetski and Riggers (2004) discovered that petting a dog alone can increase immunoglobulin A (IgA). Higher levels of IgA have been correlated to less recurrent illness and less vulnerability to upper respiratory infections. Charnetski and

Riggers (2004) used a Pet Attitude Scale to determine that these positive effects on IgA levels occurred in everyone no matter what his or her attitude towards pets were. This scale is an 18 item, Likert-format used to measure the favorableness attitudes toward pets (Templer, Slater, Dickey, Baldwin & Veleber, 1981).

Animals provide many physiological effects to human beings including decreases in heart rate, blood pressure, neurohormone levels, anxiety, phobias, aggression, stress, as well as increases in oxytocin, IgA, and relaxation (Allen et al., 2002; Barker et al., 2005; Charnetski & Riggers, 2004; Cole et al., 2007; Kaminski et al., 2002; Kanamori et al., 2001; Miller et al., 2009; Nagasawa et al., 2009; Wu et al., 2002). These physiological benefits impact an individual's overall health and overall well-being.

Psychological

Animals have been shown to have positive influence on the psychological health of individuals with a variety of diagnoses in a number of settings (Chu, Liu, Sun, & Lin, 2009; Banks, Willoughby, & Banks, 2008). This includes creating a sense of safety and trust, increasing motivation, self-esteem, and confidence, as well as decreasing depression and anxiety (Chu et al., 2009). According to González-Ramírez, Ortiz-Jiménez, and Landero-Hernández (2013), the use of AAT resulted in a great reduction of stress symptoms when compared to a Cognitive Behavioral Therapy (CBT) approach alone. Two individuals that were included in this study, reported decreased feelings of stress as well as displaying more adherence to the therapy program as opposed to a strictly CBT session (González-Ramírez, Ortiz-Jiménez, & Landero-Hernández, 2013).

Research suggest that the use of AAT has lasting effects on reduction of anxiety and stress related symptoms associated with a neurological disorder. Berget, Ekeberg,

Pedersen, and Braastad (2011) discovered that six months post intervention, participants in their study had significantly lower anxiety and depression levels than baseline and post-interventions scores. During this study, patients learned new tasks and skills which lead to an increase in self-confidence causing individuals to be less afraid of interactions with other people or new experiences and situations. Along with minimizing stress, anxiety, and depression, AAT has the potential to reduce isolation and strengthen relationship bonds within individuals who have a neurological disorder (Banks et al., 2008; Mills & Hall, 2014).

An individual's quality of life has been shown to improve through the use of AAT (Diefenbeck, Bouffard, Matukaitis, Hastings, & Coble, 2010). Aspects that are identified as responsible for improving quality of life include, decreases in anxiety, depression, and stress (Berget et al., 2011; González-Ramírez et al., 2013), improving self-esteem, confidence, and self-worth (Chu et al., 2009), and minimizing feelings of loneliness by strengthening bonds and relationships (Banks et al., 2008; Mills & Hall, 2014).

By incorporating AAT into treatment sessions, it stimulates feelings of accomplishment and responsibility which in turn increases the individual's self-worth, self-control, and group participation (Banks et al., 2008; Berget et al., 2011; Chu et al., 2009; González-Ramírez et al., 2013; Mills & Hall, 2014). In addition to psychological benefits of AAT, some of the psychological and cognitive goals addressed in AAT sessions include, ability to follow directions, brighten mood and affect, improve cooperation as well as participation, and also, improving reality orientation (Gerth, n.d.)

Physical

Individuals with physical disabilities may benefit from the effects of AAT. These benefits include increased walking speed, walking distance, balance, trunk control, improved gait patterns, and transfer training (Abate, Zucconi, & Boxer, 2011; Abbud, Janelle, & Vocos, 2014; Rondeau et al., 2010). More specifically, the use of AAT as an ambulatory aid further allows individuals to ambulate with a narrower base of support, a linear trajectory, better cadence, as well as allowing the arms to rest closer to the body (Abbud et al., 2014).

Abate, Zucconi, and Boxer (2011) discovered that incorporating an animal into sessions to address ambulation resulted in decreased refusals therefore promoting a quicker recovery and a shorter hospitalization. The distance or number of steps significantly improved with patients ambulating with a dog (Abate et al., 2011). According to Bode, Costa, and Frey (2007) when using AAT for ambulation, individuals were less distracted and did not focus on themselves which allowed for increased speed and distance when ambulating. However, during 180 degree turns, a portion of participants voiced concern about stepping on the dog or tripping during their turn and felt the dog was in the way at times (Bode et al., 2007).

In a study conducted by Rondeau et al. (2010), participants adopted spontaneous weight shift patterns when using AAT for gait training purposes post stroke that was not seen when ambulating with an assistive device, such as a walker or cane. This weight shift allowed for participants to weight bear on the limb with hemiparesis which increased sensory input. Learning to use a cane or a walker has the potential to increase the difficulty associated with gait training. Individuals not only have to relearn how to

ambulate, they are also required to learn how to properly use ambulatory devices. When using AAT for gait training, the individual is able to solely focus on ambulation rather than having to learn how to coordinate the static object with his/her movements (Rondeau et al., 2010).

Along with using AAT for postural correction and balance reeducation, another physical benefit includes the use of AAT during transfer training (Rondeau et al., 2010). During sit to stand transfers or transfers to and from a bed, the use of AAT allows the individual to transfer with greater ease as opposed to using a cane or walker. The individual does not have to coordinate the placement of the ambulatory aid when using a dog to assist with a transfer. The animal is positioned in front of the individual merely for balance which promotes anterior flexion of the trunk needed for safe transfers (Rondeau et al., 2010).

Ultimately, the use of AAT as a tool to promote physical benefits has been shown to increase individuals' independence while also increasing their confidence and motivation to regain function (Abbud et al., 2014; Bode et al., 2007; Rondeau et al., 2010). AAT also has the potential to improve an individual's strength, body awareness, tactile tolerance, as well as increasing visual perceptual skills (Gerth, n.d.).

Social

AAT can provide patients with not only numerous physical, physiological, and psychological benefits, but social benefits as well. Various studies have been conducted to determine the social effects animals have on people. Studies have found animals, especially dogs, have had positive effects on verbal and nonverbal communication (Hall & Malpus, 2000; Kovacs, Kis, Rozsa, & Rozsa, 2004; LaFrance, Garcia, & Labreche,

2007; McNicholas & Collis, 2000). Animals also have the ability to facilitate and motivate individuals to engage in social interactions (Hall & Malpus, 2000; LaFrance et al., 2007; Macauley, 2006; Martin & Farnum, 2002; McNicholas & Collis, 2000; Richeson, 2003; Sams, Fortney, & Willenbring, 2006; Wood, Giles-Corti, & Bulsara, 2005). In fact, numerous authors describe dogs as “catalysts” for socialization (Hall & Malpus, 2000; LaFrance et al., 2007; Macauley, 2006; McNicholas & Collis, 2000).

Decreased social participation can lead to feelings of isolation or loneliness. Individuals affected by aphasia are examples of how one's illness or disease may impact their socialization as they can easily fall into a negative pattern. Kagan explained that the pattern includes decreased conversation skills after the onset of aphasia, followed by decreased opportunity to participate in conversation, next the individuals feel as if they need to hide their lack of ability to communicate with others, which in the end excludes them even more from social interactions (as cited in LaFrance et al., 2007, p. 223). The negative cycle is generated causing the individual with aphasia to feel socially isolated and lonely.

Animals, especially dogs, can provide comfort and empathetic listening needed by many individuals who have social impairments (LaFrance et al., 2007). Social interaction with humans may involve the risk of being judged, criticized, rejected, or given unwanted advice. On the other hand, dogs are empathetic listeners which provide nonverbal feedback in a judgment-free way (LaFrance et al., 2007). This may be why people are more motivated to engage in social participation with an animal rather than a person.

Verbal and nonverbal communication skills are important elements of being able to effectively engage in socialization. Animals have the ability to increase verbal skills

including: automatic speech, efforts to verbalize, fabrication of single words, talking, and laughing (Hall & Malpus, 2000; LaFrance et al., 2007). Animals can also increase nonverbal communication skills including smiling, making eye contact, gesturing, and head nodding (Hall & Malpus, 2000; LaFrance et al., 2007). Martin and Farnum (2002) discovered that children laughed more, had a happier and more playful mood, and increased energy when a live dog was introduced into the session. These children also were more likely to initiate frequent conversations and engage in more reciprocal conversations rather than one-sided (Martin & Farnum, 2003).

AAT has been proven to increase social interaction between humans (Barak, Savorai, Mavashev, & Beni, 2001; Hall & Malpus, 2000; LaFrance et al., 2007; McNicholas & Collis, 2000; Richeson, 2003; Sams et al., 2006; Wood et al., 2005). Richeson (2003) found that AAT intervention significantly decreased agitated behaviors and significantly increased social interaction among people with dementia. Staff and family members also commented on the changed behaviors of the individuals with dementia. Many stated that the participants were more alert, responsive, and talkative (Richeson, 2003). Richeson (2003) discovered that the AAT intervention not only benefited the participants but also seemed to promote an environment of enthusiasm and companionship for all individuals involved. Barak, Savorai, Mavashev, and Beni (2001) found that AAT increases social functioning. Barak et al. (2001) measured politeness or social appropriateness, social engagement, communication skills, instrumental social skills, friendships, and participation in treatment programs as dimensions of social functioning. All of the social functioning areas improved after AAT sessions (Barak et al., 2001).

Many studies and authors have identified the positive effects of AAT can have on the social performance of individuals; however, many are skeptical that the animal's handler may be the reason for the improvements in socialization, not the animal itself. Several studies have concluded that the increases in social interaction are due solely to the dog and not the dog's handler (Hall & Malpus, 2000; LaFrance et al., 2007; McNicholas & Collis, 2000). It is evident that the animals used in AAT can provide individuals with a wide variety of benefits including increased social participation. Socialization is important in making individuals feel less lonely or isolated when a debilitating disease or illness may be taking over daily life functions. Increased social interaction is important for not only occupational therapists to address but speech language pathologists as well.

Benefits for Others

It is evident that patients can greatly benefit from the incorporation of animals into treatment sessions. Several studies have concluded that AAT can have positive effects on healthcare professionals as well (Barker et al., 2005; Miller & Ingram, 2000; Rossetti, DeFabiis, & Belpedio, 2008;). Rossetti, DeFabiis, and Belpedio (2008) found that incorporating a dog into a mental health setting promoted creativity, improved self-awareness, and increased staff morale. The staff enjoyed integrating AAT into their session as it provided an opportunity for an innovative, therapeutic approach to care (Rossetti et al., 2008).

Barker, Knisely, McCain, and Best (2005), and Miller and Ingram (2000) discovered that AAT can not only provide patients with decreased stress, but healthcare professionals as well. Miller and Ingram (2000) reported that staff members experienced

declined stress and instances of distraction from the pressure and anxiety of their jobs when interacting with the therapy animals. Barker et al. (2005) found significant decreases in serum and salivary cortisol of healthcare professional working with AAT. There were significant reductions in stress after 20 minutes of quiet rest and after only 5 minutes of interaction with the therapy dog (Barak et al., 2005). This is important for healthcare professionals as their schedules are quite busy and they normally don't have 20 minutes to spare for quiet rest to relax as compared to the 5 minutes of interaction with the therapy dog.

Contraindications

Despite numerous positive benefits animals have been proven to provide in AAT, there is still some controversy over implementing animals into therapy. The controversy over AAT includes issues with the client, the organization, and the animal itself. Not all client's will love animals and some may not be able to be around animals (Jalongo, Astorino, & Bomboy, 2004; Mallon, Ross, Klee, & Ross, 2010; Morrison, 2007). Some organizations worry about the diseases that animals may carry or spread (Connor & Miller, 2000; Mallon et al., 2010; Morrison, 2007; Miller & Ingram, 2000). Organizations may also be concerned with the cost effectiveness of AAT and the liability issues (Connor & Miller, 2000; Mallon et al., 2010; Morrison, 2007). Others may be concerned with the effects AAT has on the animals involved (Haubenhofner & Kirchengast, 2006; Heimlich, 2001; Jalongo et al., 2004; Serpell, Coppinger, Fine, & Peralta, 2010).

Animal-assisted therapy may not be suitable for all patients for reasons such as fear, allergies, and cultural issues. Patients may not like animals or have a fear of the animal being utilized in therapy which could increase unwanted anxiety and hinder

performance instead of improving it (Jalongo et al., 2004; Mallon et al., 2010; Morrison, 2007). The fear of the animal may be a result of a previous bad experience the patient has had with the animal or due to a specific phobia (Jalongo et al., 2004; Mallon et al., 2010). Regardless of the reason why a patient may be afraid of the animal, it is important to avoid forcing the issue and a short interview prior to intervention may assist in determining if AAT would be appropriate for the individual patient or not (Jalongo et al., 2004; Morrison, 2007).

Patients may be unable to be around the animals because of allergies or medical conditions. Some medical conditions could possibly be worsened by AAT including patients who have: compromised immune systems, allergies, or open wounds (Miller & Ingram, 2000; Morrison, 2007). Therapy dogs are well-groomed and bathed prior to visiting a patient reducing animal dander which is the most common source of an allergic reaction (Jalongo et al., 2004). Patient's medical conditions and allergies must be clarified and therapists must plan accordingly.

Lastly, cultural differences may deter a patient's motivation to engage in AAT. Some cultures believe that animals, especially dogs, are a nuisance or dirty (Jalongo et al., 2004). Individuals of different cultures have different beliefs and could have different perceptions of animals in the therapy process. It is important for healthcare professionals to recognize and consider a patient's cultural beliefs.

The main concerns organizations have with implementing AAT programs into healthcare settings are infection control, liability, and cost effectiveness (Connor & Miller, 2000; Jalongo et al., 2004; Mallon et al., 2010; Miller & Ingram, 2000; Morrison, 2007). According to the Centers for Disease Control and Prevention (CDC), zoonotic

diseases are diseases caused by bacteria, viruses, parasites, and fungi that can be passed between animals and people. According to Morrison (2007) there are 65 zoonotic diseases and although the instance of contracting a zoonotic disease is rare, even the best AAT programs have some element of risk (Connor & Miller, 2000; Mallon et al., 2010; Miller & Ingram, 2000).

Similar to all infection control procedures, hand washing is an important factor that can greatly reduce the risk of spreading zoonotic diseases (Connor & Miller, 2000; Jalongo et al., 2004; Miller & Ingram, 2000). According to Connor and Miller (2000), and Jalongo et al. (2004) noted that therapy dogs are trained not to scratch or lick which are major ways infections can be spread from animal to human. Animals should also be well groomed prior to the AAT session (Connor & Miller, 2000; Jalongo et al., 2004). Regular veterinary check-ups and screenings, semiannual temperament evaluations, and observations of unusual or sick behaviors in the animals will help keep infection control issues to a minimum (Connor & Miller, 2000; Jalongo et al., 2004; Miller & Ingram, 2000). As with any program with potential risks planning, policies, and procedures must be in place to address any concerns with safety and sanitation (Connor & Miller, 2000; Jalongo et al., 2004; Mallon et al., 2010; Miller & Ingram, 2000).

Organizations may also hesitate to implement AAT programs due to concerns with cost. Initial set-up for any new program will have start-up costs depending upon how big the program will be (Mallon et al., 2010). Cost considerations will vary but may include: animal food, animal shelter, grooming costs, and veterinary costs (Mallon et al., 2010; Morrison, 2007). Much of the costs can be decreased by donations and utilizing volunteer organizations (Morrison, 2007). Many healthcare professionals are uncertain

about implementing AAT because they are unsure of how they will be reimbursed by insurance companies. According to Morrison (2007) AAT is a modality that can be incorporated into treatment plans by healthcare professionals to assist in achieving established goals that remain the same whether the animal is involved or not. Animal-assisted therapy uses an animal as a tool or modality similar to how professional utilize games to increase standing endurance and balance. Appropriate documentation includes how the modality is helping the patient reach established goals such as, upper extremity strengthening, range of motion, balance, endurance, etc. Regardless of the modality used, weights or an animal, the focus will still be on the patient and the underlying skills worked on in the treatment session, not the modality itself.

Potential liability issues may deter healthcare facilities from implementing AAT. Mallon, Ross, Klee, and Ross (2010) discussed that the first thing organizations interested in implementing an AAT program should do is examine the existing insurance carrier's policies about animals to address liability concerns. According to the American Veterinary Medical Association (AVMA), many healthcare professionals utilizing AAT are able to acquire protection under current individual or agency personal insurance policy. Individuals also may be covered under the institution's insurance policy (AVMA, 2014). Necessary certification that the animal must go through can also help with liability concerns. Connor and Miller (2000) discussed that many animals certified through organizations have liability insurance through the certifying organization, therefore, the animal may carry its own liability insurance.

Individuals may be concerned with the effects AAT has on the animals utilized in the program. Evidence on fatigue, stress, and burn-out of therapy animals is limited,

however, there are a few studies that demonstrate the negative effects AAT has on the animals involved (Haubehofer & Kirchengast, 2006; Heimlich, 2001). Heimlich (2001) conducted a study and discovered the effects AAT had on a therapy dog. The dog underwent physiological changes such as, frequent urination and excessive panting (Heimlich, 2001). The dog suffered from urinary tract and ear infections (Heimlich, 2001).

Haubehofer and Kirchengast (2006) found that therapy dogs produced higher levels of cortisol the days they did therapeutic work compared to days when they did not. Cortisol is a hormone known for its correlation to stress. The therapy dogs in Haubehofer and Kirchengast's (2006) study had even higher cortisol levels during short therapy sessions. The owners' of these animals reported that even though the time of the sessions were shorter, they were more intense and the therapy dogs typically worked without rest breaks (Haubehofer & Kirchengast, 2006).

Even though AAT has been proven to be beneficial, it is unethical to overwork therapy animals (Jalongo et al., 2004). Serpell, Coppinger, Fine, and Peralta (2010) created helpful guidelines for supervision and care of animals used in AAT. These guidelines include the strong need of rest breaks or down-time several times throughout the day for the therapy animal to reduce stress-related fatigue (Serpell et al., 2010). When implementing an AAT program creating ethical guidelines similar to the guidelines provided by Serpell et al. (2010) can help monitor and reduce the negative effect AAT may have on the therapy animals.

Interprofessional Approach

Animals improve many different aspects of the human such as: physical, social, physiological, and psychological. This is important not only for occupational therapists but other healthcare professionals as well. Physical therapists, speech pathologists, and occupational therapists are part of an important interprofessional healthcare team in neurorehabilitation (Karol, 2014; Suddick & De Souza, 2006). Multiple disciplines are usually needed to address patients' complicated health care needs (Davidson, Odegard, Maki, & Tomkowiak, 2011). All members of the interprofessional healthcare team work together on common goals to improve a patients outcomes (Bridges et al., 2011). Teamwork within neurorehabilitation has proven to have many benefits such as increased problem solving and goal directed activity, improved motivation and patient centered care, and improved outcome of interventions (Suddick & De Souza, 2006). Animal-assisted therapy may be a good approach for clients served by all members of the interprofessional healthcare team.

Physical Therapy

According to the American Physical Therapy Association (APTA) (2013), physical therapists are health care professionals who assist in restoring mobility and decreasing pain. Physical therapists work in a wide variety of settings to improve a patient's capacity to move, reestablish function, diminish pain, and inhibit disability (APTA, 2013). Animal-assisted therapy has been proven to increase: balance, walking speed, walking distance, gait patterns, trunk control, and transfer training which all may be areas affected by neurological diseases or illnesses (Abate et al., 2011; Abbud et al.,

2014; Bode et al., 2007; Rondeau et al., 2010). Physical therapists play an important part in restoring all of these effected areas with neurologically impaired patients.

Gait training is a major area that physical therapists in neurorehabilitation address. During gait training, AAT allows individuals to easily adapt to a loss of balance by providing dynamic support in all directions through the harness attached to the dog. Abbud, Janelle, and Vocos (2014) concluded that gait training through the use of AAT allowed participants to significantly improve walking patterns, develop safer independent mobility, as well as an increase in social and professional engagement. Rondeau et al. (2010) also determined that AAT was beneficial for gait training in patients with neurological impairments. Many physical therapists utilize walking aids such as canes to assist with gait training. Rondeau et al. (2010) discussed how canes are not the best use for gait retraining as they can lead to lack of fluidity in gait patterns. Many people who utilize canes are often observed to be bent forward and put a large amount of weight on the cane (Rondeau et al., 2010). Utilizing dogs as compared to a cane produced a more normal gait pattern, better fluidity of movement, and larger steps leading to faster ambulation and longer distance (Rondeau et al., 2010).

Physical therapists have goals in neurorehabilitation to improve the physical components of the person. Examples of physical goals include: the use of affected limbs, improve coordination, increase strength, and improve hand/eye coordination (Gerth, n.d.). Examples of ways in which physical therapists might use animals to reach those goals include: petting, holding a leash and walking, brushing, positioning animal on affected side to encourage use of affected extremity, assist animal through obstacle

course, throw toys for animal to retrieve, play tug-a-war with the animal, etc. (Gerth, n.d.).

Speech Language Pathology

Speech Language Pathologist's (SLP) play an integral part in the rehabilitation of a neurological disease or illness. They are responsible for evaluating an individual's cognition, including attention, memory, organization, problem solving, sequencing, and communication difficulties that are commonly associated with neurological related disorders. Treatment provided by SLPs consist of cognitive therapy, language therapy, speech therapy, dysphagia therapy, and augmentative communication (Texas NeuroRehab Center, 2014). Each of these different types of therapies have the potential to utilize AAT in order to make gains toward goals specific to each individual.

Possible speech and cognitive goals that AAT can be incorporated into include initiating speech, encouraging use of questions, improving descriptive skills, increasing ability to organize and problem solve, as well as increasing short-term/long-term memory (Gerth, n.d.). These goals can be reached by having the person make introduction of self and animal to others, teaching commands the animal is familiar with, and comparing and contrasting the size of various animals. When therapy is focused on cognitive remediation, AAT can be used in a variety of ways including having the individuals create an obstacle course or a care plan for the animal, learning gentle ways to handle the animal, and asking the individual for facts about the animal (Gerth, n.d.).

By incorporating AAT into SLP therapy sessions a variety of benefits can be seen in a variety of diagnoses. These benefits include facilitating verbal and non-verbal communication (Hall & Malpus, 2000; Kovacs et al., 2004; LaFrance et al., 2007;

McNicholas & Collis, 2000), motivating individuals to engage in social interactions (Hall & Malpus, 2000; LaFrance et al., 2007; Macauley, 2006; Martin & Farnum, 2002; McNicholas & Collis, 2000; Richeson, 2003; Sams et al., 2006; Wood et al., 2005), and increasing social functioning (Barak et al., 2001). Macauley (2006) found that patients were more motivated to engage in therapy, more eager to pay attention, and more likely to attend therapy when AAT was incorporated into speech-language interventions. Individuals in both the standard speech-language treatments and the speech-language treatments incorporating AAT all improved and met their treatment goals, however, patients in the AAT group displayed more eagerness to start therapy sessions, spontaneously initiated more conversations, and displayed more emotions (Macauley, 2006).

Occupational Therapy

Occupational therapists are trained healthcare professionals who provide unique and creative interventions to a variety of clients in many different settings. Although intervention or treatment approaches may vary from patient to patient and from setting to setting, all occupational therapists provide care in a holistic manner. Addressing the client in a holistic manner means that all aspects of the client are kept in mind when providing therapy. Occupational therapists are concerned with the physical, emotional, social, and psychological aspects of the client (AOTA, 2014). Animal-assisted therapy has been shown to improve each of these aspects in a variety of clients across different settings (Miller & Ingram, 2000; Diefenbeck et al., 2010).

The use of AAT has been well documented in both mental health and physical rehabilitation settings. The psychological benefits that are associated with AAT have

been shown to have long-term effects (Berget et al., 2011; Diefenbeck et al., 2010). This in part is due to the individual learning new skills, increasing self-confidence, establishing a feeling of self-worth by taking on the responsibility associated with the care of the animal, and decreasing stress and anxiety (Berget et al., 2011; Chu et al., 2009; González-Ramírez et al., 2013). These positive benefits can also be translated to patients who have neurological deficits as they may suffer from shock, denial, depression, anxiety, or anger (Atkins, 2008). During rehabilitation in a physical disability setting, the use of AAT can be used in all aspects of the session to address a variety of different goals. These goals can consist of improving fine/gross motor skills, crossing midline, body awareness, encourage use of affected limb, along with increasing visual perceptual skills and tactile tolerance (Gerth n.d.).

An occupational therapist can incorporate AAT into therapy to address fine and gross motor skills by having the individual buckle the collar, snap leash, give treats, grasp brush/leash, or throw stick/ball to have the animal retrieve. In order to encourage the patient to cross midline, the animal can be placed on either side of the individual while he/she reach across his/her body to brush the animal. Animal-assisted therapy can increase body awareness is by having the individual name parts of the animal body or have him/her match body parts with that of the animal's. The use of AAT is also beneficial in increasing tactile tolerance or tactile stimulation by encouraging the individual to touch the animals coat, nose, pads of feet, or even given the animal a bath (Gerth n.d.). The use of AAT can be easily tailored to meet the needs of the individual or the goal in order to elicit the most beneficial outcome. Therefore, incorporating AAT can be of high benefit to almost all occupational therapists.

Occupational Therapy Practice Framework and AAT

The American Occupational Therapy Association (AOTA) (2014) has created and published the 3rd edition of the *Occupational Therapy Practice Framework: Domain and Process*. This framework provides a summary of organized and connected concepts that explain occupational therapy practice (AOTA, 2014). The framework includes different areas of occupation in which occupational therapists address with their patients.

Occupations are activities that occur in everyday life which include: activities of daily living (ADLs), instrumental activities of daily living (IADLs), rest and sleep, work, education, leisure, play, and social participation (AOTA, 2014). Animal-assisted therapy has been proven beneficial in a number of ways which may assist occupational therapists in improving different areas of occupation for patients with neurological impairments. Animal-assisted therapy is a natural fit with ADLs and IADLs such as bathing, grooming, and functional mobility.

Conclusion

The benefits, contraindication, and utilization of animals into visitations or therapy sessions has been well documented, although the documentation of the process needed to implement these animals into a treatment facility is scarce. When utilized by a variety of professional, AAT has been shown to positively impact on the physiological, psychological, social, and physical aspects of the individuals engaged in treatment, however, the limited number of facilities utilizing AAT in Neurological Rehabilitation units is limited. There is a need for the documentation and understanding of the legalities, fundamental, polices, and procedures associated with the implementation of AAT. The protocol that was developed to address this issue is intended to increase the

understanding of the process needed to implement AAT into Neurological Rehabilitation unit by an interprofessional rehabilitation team.

This chapter was aimed at providing a review of the literature related to the use of AAT while establishing a baseline of information and foundational knowledge of the implications and benefits associated with the utilization of AAT within a Neurological Rehabilitation Unit. The following chapter is comprised of a description of the methodology used including the steps and activities that were followed to develop the comprehensive user friendly protocol.

CHAPTER III

METHODOLOGY

There is an evident need for more research and documentation on the process and criteria needed to implement an animal-assisted therapy (AAT) program within a hospital setting. The existing literature is a clear representation of the impact AAT has on the varying aspects of a client's care, while the literature provides promising support for the use of AAT as a means of therapy with multiple populations. The need for further documentation exist regarding the legalities, fundamentals, policies and procedures, and interventions used in goal-directed therapy.

Animal-assisted therapy became of interest after attending in services for the student occupational therapy association and discussions about using AAT within the profession of occupational therapy. Contact was initiated by a Midwestern hospital to develop and assist with the implementation of an AAT program within the inpatient unit. It was established that the guidelines and interventions would be tailored for patients with neurological impairments, as that is the primary population within the inpatient unit. A need for a multidisciplinary protocol including guidelines and interventions for the utilization of AAT was determined as there are limited facilities in the Midwest that have an AAT program.

An interprofessional healthcare protocol for the implementation and utilization of AAT with clients who have neurological impairments was created to assist professionals

with implementing, understanding the practice guidelines, and utilizing effective means to successfully incorporate an AAT program. An extensive review of the literature was completed using CINAHL, PubMed, PsychInfo, and OT Search to gain a comprehensive understanding of the difference between animal-assisted activity (AAA) and AAT, the benefits and contraindications of AAT, and the role of the interprofessional team using AAT. The resources included within the literature review were journal articles, websites, and textbooks. Area facilities were contacted to identify existing policies and procedures that were being utilized for AAA programs. Upon completion of the literature review, meetings were scheduled with staff members at a Midwestern hospital to obtain input and feedback on program development. Suggestions provided by staff at Midwestern hospitals were taken into consideration when creating this protocol.

This protocol provides facilities with guidelines and suggestions to consider prior to implementing an AAT program. The contents of the protocol included: benefits of AAT for the client, connection between Occupational Therapy Practice Framework and the use of AAT, authorized users of AAT including PT, SLP, and OT, skills competency evaluation, requirements and eligibility, policies and procedures, and finally suggested interventions incorporating AAT into goal directed occupational therapy. Additionally, means to evaluate the AAT and client outcomes are included in the appendix.

The development of this protocol was guided by the Lifestyle Performance model. The Lifestyle Performance model uses a holistic approach while focusing on an individual's need for quality of life within the four domains outlined. These four domains include; Self-care and Self maintenance, Societal Contributions, Intrinsic Gratification,

and Reciprocal Interpersonal Relatedness (Velde & Fidler, 2002). These four domains structured the development of the protocol by incorporating terms used in the Occupation Therapy Practice Framework (OTPF) to outline suggested AAT interventions. The areas of occupation outline in the OTPF were incorporated into the respected domains of the Lifestyle Performance model.

The domain of self-care and self-maintenance incorporates the occupations of activities of daily living and instrumental activities of daily living including bathing/showering, dressing, toileting, feeding, grooming/hygiene, functional mobility, shopping, and rest/sleep (AOTA, 2014; Velde & Fidler, 2002). The second domain, intrinsic gratification, includes the occupations of leisure and play. Societal contribution, the third domain, includes the occupations of work, volunteer, and education. The last domain, reciprocal interpersonal relatedness, includes the occupation of social participation (AOTA, 2014; Velde & Fidler, 2002).

This model was chosen to guide the creation of this protocol as the Lifestyle Performance model places emphasis on two major constructs; activity elements of an environment and the nature and interrelationships of activities (Velde & Fidler, 2002). These two constructs are highlighted throughout the protocol as the activity element is represented by the utilization of AAT within the environment and the nature and interrelationship of activities is demonstrated through engagement in occupations with the animal. Additionally the Lifestyle Performance model highlights key concepts that the environment must provide in order for the individual to obtain optimal quality of life. These concepts include, autonomy, individuality, affiliation, volition, and self-efficacy (Velde & Fidler, 2002). In relation to these environmental concepts, AAT has been

proven to increase motivation, self-esteem, social participation, and independence (Abbud et al., 2014; Banks et al., 2008; Chu et al., 2009; Mill & Hall, 2014; Hall & Malpus, 2000). Therefore the Lifestyle Performance model has been an appropriate driving factor behind the creation of this protocol.

Chapter IV provides an introduction and summary of the protocol. This chapter includes the purpose, layout, and structure as well as the intent of the protocol within a neurological rehabilitation unit. The entire protocol is included in the appendix.

CHAPTER IV

PRODUCT

The purpose of this product was to create a protocol to assist occupational therapists and other healthcare professionals with the implementation and utilization of an AAT program within a neurological rehabilitation facility. The goal of the product was to provide facilities interested in AAT with guidelines and suggestions to consider prior to implementation. The product includes an introduction to AAT, benefits of AAT, connection between the Occupational Therapy Practice Framework and AAT, authorized AAT users, skills competency evaluation, requirements and eligibility, policies and procedures, and suggested interventions using AAT. In addition an evaluation tool to measure client's satisfaction regarding AAT was included.

The Lifestyle Performance Model was used in developing this product. The Lifestyle Performance model considers an individual's quality of life within four separate domains including self-care and self-maintenance, societal contributions, intrinsic gratification, and reciprocal interpersonal relatedness (Velde & Fidler, 2002). These four domains structured the development of the product especially in the AAT interventions section. All four of these domains cover the majority of the areas of occupation identified in the Occupational Therapy Practice Framework. The Lifestyle Performance model highlights key concepts that the environment must provide in order for the individual to obtain optimal quality of life. These concepts include, autonomy, individuality,

affiliation, volition, and self-efficacy (Velde & Fidler, 2002). In relation to these environmental concepts, AAT has been proven to increase motivation, self-esteem, social participation, and independence (Abbud et al., 2014; Banks et al., 2008; Chu et al., 2009; Mill & Hall, 2014; Hall & Malpus, 2000). Therefore the Lifestyle Performance model has been an appropriate driving factor behind the creation of this product.

The product was designed to include important information and benefits of AAT to encourage healthcare professionals to consider if implementing an AAT program would be appropriate and beneficial in his or her facility. In this product an emphasis is placed particularly on how occupational therapists can utilize AAT through its connection to the Occupational Therapy Practice Framework, however, information was provided for other disciplines in the authorized users section including physical therapy and speech pathology.

It is important for healthcare professionals to be competent with the treatment techniques provided to clients, therefore a skills competency section was added to this product to ensure the healthcare professional has the appropriate knowledge of AAT including the indications and contraindications, proper hygiene protocols, and appropriate techniques. This product includes sections on AAT policies, procedures, eligibility, and requirements which will assist the healthcare professionals in expanding his or her knowledge regarding AAT in order to pass the skills competency evaluation and safely utilize AAT in therapy sessions.

The Lifestyle Performance Model provided a framework to create the intervention section of this product by breaking occupations into the four domains. The performance skills required for each occupation were outlined so healthcare professionals can

determine what skills are needed to complete each occupation. The healthcare professional can determine which skill or skills he or she wants to work on and then he or she can go to the performance skills section of the product to determine an intervention incorporating the animal.

Finally the product provides healthcare professionals with an outcome evaluation form to determine satisfaction regarding AAT. Client satisfaction of therapy services are important aspects of the therapy process. Through the outcome evaluation tool provided in the product, healthcare professionals will be able to determine client's satisfaction regarding AAT.

Chapter V provides a conclusion and summary of the overall scholarly project. This chapter includes benefits of the project, the purpose the project, an overview of what the product contains, proposal for how the project could be implemented, how outcomes will be measured, limitations or barriers of implementation, and recommendations for further action, development, and research.

CHAPTER V

SUMMARY

Animal-assisted therapy has been proven beneficial as a unique treatment modality in improving the physiological, physical, social, and psychological aspects of an individual's overall quality of life; it is also associated with increasing staff morale and reducing stress related to work (Diefenbeck, Bouffard, Matukaitis, Hastings & Coble, 2010; Miller & Ingram, 2000; Rossetti, DeFabiis & Belpedio, 2008). Animal-assisted therapy improves quality of life by motivating engagement in goal directed therapy. The overall advantage of using AAT allows for a holistic approach when engaging a client in functional activities and meaningful occupations to achieve independence in daily living.

This scholarly project was designed for the purpose of providing occupational therapists with a reference tool for the development, implementation, and use of an AAT program. Although, AAT has been proven beneficial throughout the literature review, there currently are no facilities that utilize an AAT program within the Midwest region. Additionally, literature suggests that the existing protocols have been written for recreational visits rather than for goal directed therapy (Winkle & Jackson, 2012). Within this protocol policies and procedures have been designed for facility implementation to increase AAT opportunities within rehabilitation facilities for use by an interprofessional team.

This reference tool provides an overview of how AAT relates to the profession of occupational therapy in connection to the Occupational Therapy Practice Framework, guidelines to implementation, along with specific AAT interventions to be utilized by occupational therapists. Animal-assisted therapy is connected to the Occupational Therapy Practice Framework through the terminology used and incorporation of a variety of preparatory and occupation-based interventions. The protocol provides guidelines for policies, procedures, requirements and eligibility, authorized users, and competency evaluation to ensure success for implementation and utilization of an AAT program. The interventions have been organized by specific performance skills needed to successfully engage in meaningful occupations. Interventions have been specifically tailored for individuals with neurological impairments. Therapists are encouraged to grade interventions according to the client's skills set.

The intent of this scholarly project is to be implemented and utilized at a Midwestern hospital on an inpatient neurological unit. Portions of the protocol are designed and intended to be used by an interprofessional healthcare team to increase awareness and opportunities associated with AAT. It is recommended that the facility hold an in-service to introduce the protocol and outline implementation procedures. Additional in-services should be provided for occupational therapy staff to introduce the specifically tailored and suggested interventions that can be incorporated into AAT treatment sessions. The reference tool is available for therapists to refer to as they incorporate AAT into goal directed therapy for individuals with neurological impairments. It is hoped that this project will increase awareness and utilization of AAT in the Midwest region as well as provide meaningful occupation based interventions. The

outcomes of this program development can be measured by using the sample client satisfaction survey.

Barriers that may exist for implementation of this AAT program include concerns with transmitting diseases, cost effectiveness, and liability issues. To diminish some of the concerns with spreading diseases, proper hand hygiene should be followed. One of the procedures in the policies and procedures section states that the handler should provide sanitizer to the client before and after therapy. Another way to reduce the risk of spreading disease is to follow the requirements for regularly veterinary check-ups.

Costs associated with implementation of an AAT program may be an additional barrier. Initial set-up for any new program will have start-up costs depending upon the size of the program; however, much of the costs can be offset by donations and utilizing volunteer organizations. Also, healthcare professionals may be uncertain about implementing AAT because they are unsure of how they will be reimbursed by insurance companies. Animal-assisted therapy is a modality that can be incorporated into treatment plans by healthcare professionals to assist in achieving established goals that remain the same whether the animal is involved or not. Animal-assisted therapy uses an animal as a tool or modality similar to how professionals utilize games to increase standing endurance and balance. The focus needs to be on the patient and the underlying skills addressed in the treatment session, not the modality itself.

Organizations may be concerned with liability since an animal is unpredictable and accidents can occur. This barrier could be diminished by considering the criteria used by the organization certifying the animal. Liability coverage is provided by most therapy certification organizations.

Limitations of the project that warrant further development include limited demographics for suggested occupations; it was designed with one facility in mind. Canines were the only animal considered when designing the program and the interventions were specific to occupational therapy. A recommendation for further development of this project is to create new interventions or adapt the provided interventions for a variety of clientele. Interventions may also be created or adapted for specific interventions for physical and speech therapy. The policies, procedures, requirements, and eligibility sections of this project may need to be adapted to fit additional facilities. Further research is needed to determine the feasibility and effectiveness of incorporating a wider range of animals in an AAT program.

Research is needed to further document outcomes and effectiveness of AAT programming. This research could include specific documentation on improvements in client's functioning, such as fine motor or crossing midline. Research could be conducted to determine the effectiveness of AAT versus other traditional occupational therapy approaches to treating an individual with a neurological impairment. Unilateral neglect is a common issue among those with neurological impairments; therefore a study documenting the effectiveness of AAT versus traditional occupational therapy methods to decrease unilateral neglect is suggested. It is also suggested that research is done documenting changes in performance over time using tools such as the Assessment of Motor and Process Skills (AMPS) and the Role Checklist (Fisher & Jones, 2010; Kielhofner, 2008). Qualitative interviewing and focus groups with clients and their families could help to better understand the impact AAT had on the client and their families.

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APPENDIX

A Protocol For Animal-Assisted Therapy
In a Midwestern Hospital: A Reference
Tool for Occupational Therapists



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Foreword

Research shows that the use of animals within therapy improves physiological, psychological, social, and physical aspects of clients (Diefenbeck, Bouffard, Matukaitis, Hastings & Coble, 2010; Miller & Ingram, 2000). The role of animals within animal-assisted therapy (AAT) provide the therapists with a unique tool to utilize in various aspects of therapy, including treatment planning, where the clinician can match the client's physical, social, or psychological needs. There is an abundance of literature on the benefits of animal visitation or animal-assisted activities (AAA), however, there is a lack of literature outlining the implementation of AAT and the specific parameters for the use of an animal in therapy sessions. A need for a multidisciplinary protocol including guidelines and interventions for the utilization of AAT was determined as there are limited facilities in the Midwest that have an AAT program.

The following reference tool was designed to be an interprofessional healthcare protocol for the implementation and utilization of AAT with clients who have neurological impairments. The purpose of the reference tool is to assist professionals with implementing, understanding the practice guidelines, and utilizing an effective treatment modality to successfully meet the needs of the clients. This reference tool outlines the benefits of AAT, the connection of utilizing AAT along with the Occupational Therapy Practice Framework (OTPF), authorized users and handlers of AAT, skills competency for professionals, facility policies and procedures, requirements and eligibility of AAT, suggested AAT interventions to incorporate into goal-directed occupational therapy treatment sessions, and lastly an outcome measure to determine the effectiveness of the AAT program.

This reference guide was designed using the Lifestyle Performance Model, created by Gail Fidler in 1996. This model uses a holistic approach while focusing on an individual's need for quality of life within four domains. These domains are closely associated with the areas of occupation outlined in the OTPF. The domains and areas of occupation in the OTPF structured the development of this reference guide when creating and organizing functional interventions to be utilized and implemented into an AAT program.

The intent of this reference guide is to be used to successfully develop and implement an AAT program within a multidisciplinary healthcare facility while providing many benefits to clients through the use of this unique treatment modality. The interventions section is broken up into two sections and is aimed for use solely by occupational therapy personnel. The first section outlines the functional components of the identified occupations in the respective four domains. The second section is comprised of suggested AAT interventions to assist the client with mastering the functional components that are required to complete the desired occupation. The occupations and interventions selected were tailored to populations with neurological impairments, however, may be adapted to fit additional populations at the therapist's discretion.

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Animal-Assisted Therapy

The number of pet owners in the United States has tripled since 1970 and is continuously growing. According to the Humane Society of the United States (2014), approximately 62% of households are current pet owners with an estimated total of over 164 million individuals caring for pets. Each year, more than one million individuals are impacted by an animal incorporated into therapy sessions (Pet Partners, 2012). These therapy interactions occur within hospitals, rehab centers, nursing homes, schools, home environments, and in the community impacting toddlers to seniors. The animals used within these facilities are incorporated into recreational visits or used as a means of therapy.

Recreational visits, known as animal-assisted activities (AAA), allow for educational, motivational, and/or therapeutic benefits to increase quality of life (Pet Partners, 2012). During AAA, no specific goals or timelines are established as it is a spontaneous pet visitation between the animal and individual. The session is not specific or tailored to the individual's needs or diagnosis, as the content of the session is not controlled.

Animals use as means of therapy, also known as animal-assisted therapy (AAT) is a form of therapy that supports development in social, emotional, physical, and/or cognitive functioning (Pet Partners, 2012). The interventions meet specific treatment criteria, are formally documented to measure progress, meet specific guidelines as well as timelines, and are provided within the scope of practice of a health/human service professional with specialized expertise (Pet Partners, 2012).

The use of animals as a means of therapy fosters physical, social, psychological, and physiological benefits for all ages. Animal-assisted therapy can be integrated into a patient's plan of care to aid in healing patients holistically (Matuszek, 2010). This holistic approach can provide assistance and offer independence to the patients who utilize this form of treatment modalities (National Rehabilitation Information Center, 2013). The role of animals within AAT provides the therapist with a unique tool to utilize in various aspects of the therapy process in order to match the client's physiological, psychological, physical, or social needs.

Benefits of AAT

Physiological

- Lowers heart rate/blood pressure
- Decrease neurohormone Levels
- Decrease anxiety
- Decrease phobias
- Decrease aggression
- Decrease stress
- Relaxing/calming effect

• Allen, Blascovich, & Mendes, 2002; Barker, Knisely, McCain, & Best, 2005; Cole, Gawlinski, Steers, & Kotlerman, 2007; Kaminski, Pellino, & Wish, 2002; Kanamori et al., 2001; Miller et al., 2009; Nagasawa, Kikusui, Onaka, & Ohta, 2009; Wu, Niedra, Pendergast, & McCrindle, 2002

Psychological

- Create a sense of safety and trust
- Increase motivation
- Increase self-esteem
- Increase confidence,
- Decrease depression/anxiety
- Reduce isolation
- Strengthen relationship bonds

• Banks, Willoughby, & Banks, 2008; Chu, Liu, Sun, & Lin, 2009; Mills & Hall, 2014

Physical

- Increase walking speed and distance
- Increase balance and trunk control
- Improved gait patterns
- Improved transfer training
- Ambulate with a narrower base of support
- Improve strength
- Increase body awareness
- Increase tactile tolerance
- Increase visual perceptual skills

• Abate, Zucconi, & Boxer, 2011; Abbud, Janelle, & Vocos, 2014; Gerth, n.d.; Rondeau et al., 2010

Social

- Motivate social interactions
- Catalysts for socialization
- Provide comfort and empathetic listening
- Provide nonverbal feedback in a judgment-free way
- Increase verbal skills
- Increase non-verbal communication
- Promote an environment of enthusiasm and companionship

• Hall & Malpus, 2000; LaFrance, Garcia, Labreche, 2007; Macauley, 2006; Martin & Farnum, 2002; McNicholas & Collis, 2000; Richeson, 2003; Sams, Fortney, & Willenbring, 2006; Wood, Giles-Corti, & Bulsara, 2005

Occupational Therapy Practice Framework and AAT

American Journal of Occupational Therapy Association. (2014). Occupational therapy practice framework: Domain and process (3rd ed.). *American Journal of Occupational Therapy*, 68(Suppl. 1), S1 – S48. <http://dx.doi.org/10.5014/ajot.2014.682006>

The American Occupational Therapy Association (AOTA) (2014) has created and published the 3rd edition of the Occupational Therapy Practice Framework: Domain and Process (OTPF). This framework provides a summary of organized and connected concepts that explains occupational therapy practice (AOTA, 2014). The following provides intervention ideas and activities base on the OTPF. This includes areas of occupation, client factors, activity demands, performance skills, performance patterns, and contexts and environments. This section is provided for a starting point for planning goals and intervention using AAT.

Areas of Occupation

Activities of Daily Living

Bathing/Showering:

- Obtaining and utilizing supplies necessary to bath the animal
- Following the correct sequencing pattern to bath the animal
 - soaping, rinsing, and drying the animal

Dressing:

- Selecting/obtaining clothing for animal in response to weather/occasion
- Following a sequential pattern to dress and undress the animal

Feeding:

- Setting up and arranging the animal's food and water
- Pouring water and food into correct dishes
- Giving the animal treats

Functional Mobility:

- Walking the animal
- Physical support and assist with transfers
- Ambulating and carrying an object such as a toy or treat to the animal

Bowl and Bladder Management:

- Training the animal
- Developing a schedule or routine for the animal

Personal Hygiene and Grooming:

- Washing and drying the animal
- Brushing, styling, combing, and trimming the animal's hair
- Nail and mouth care of animal including brushing teeth and clipping nails

Instrumental Activities of Daily Living

Care of Others/Pets:

- Arranging, supervising, and providing care for the animal
- Completing necessary responsibilities for caring for the animal
 - feeding the animal
 - providing the animal with exercise
 - giving the animal shelter
 - loving the animal
 - scheduling appointments for the animal

Community Mobility:

- Planning and moving around in the community with the animal
- Accessing public parks or trails

Financial Management:

- Practicing managing the finances required to provide adequate care of the animal

Health Management and Maintenance:

- Developing, managing, and preserving routines for the animal's health and wellness
 - schedule for exercise or medications
- Engaging in exercise routines with the animal

Meal Preparation and Cleanup:

- Planning, preparing, and serving meals to the animals
- Cleaning up utensils and any food messes after the animal eats

Shopping:

- Creating lists of necessary animal supplies
- Selecting, purchasing, and transporting the animal's items
- Using appropriate methods of payment and completing all money transactions while purchasing animal's supplies

Education

All activities required for learning and engaging in the scholastic environment are known as education according to AOTA (2014). This includes formal and informal educational participation as well as informal personal educational exploration (AOTA, 2014). There are a number of programs developed across the world that use animals to support the educational environment (Intermountain Therapy Animals, n.d.). These programs use an animal to improve the individual's communication and reading skills (Intermountain Therapy Animals, n.d.). Typically, animals are introduced into the educational environment to allow the individual to practice reading out loud. Animals provide the people with a safe, non-judgmental environment. This can help calm the person and decrease any anxiety or stress in the academic environment (Intermountain Therapy Animals, nd). Animals may also be used to improve a variety of skills needed to participate in education including: reading, comprehension, concentration, direction following, memory, spelling, writing, counting, etc.

Rest and Sleep

Rest:

- Identifying own need and animal's need to relax
- Engaging with the animal in calming activities
 - grooming
 - petting

Sleep Preparation:

- Creating routines for preparing client and animal to rest
- Creating a relaxing environment for animal to rest
- Determining time for animal to rest and wake considering duration
- Establishing healthy sleep patterns for animal
- Preparing a space or bed for the animal

Leisure

Leisure Exploration:

- Identifying if interested in animals
- Identifying skills to train the animal
- Determining and engaging in opportunities to engage in activities with animals

Leisure Participation:

- Planning an appropriate activity with animal
- Engaging in a leisure activity with the animal
- Attaining, using, and maintaining equipment and supplies as needed for activity

Work

Volunteer Exploration:

- Determining community events, organizations, causes, or opportunities for unpaid work considering personal interests with animal

Volunteer Participation:

- Engaging in unpaid work activities with the animal for the benefit of a selected cause, organization, or facility
 - Visiting patients in hospital

Play

Play Exploration:

- Identifying appropriate play activities with animal including pretend play, structured games with rules, constructive play, exploration play, practice play, and symbolic play

Play Participation:

- Participating in play activities with animal
- Attaining, utilizing, and maintaining toys, equipment, and supplies for animal

Social Participation

Community:

- Engaging in community activities with the animal to increase opportunities for social interaction

Family/Friend:

- The animal may increase social interaction between peers and family
- The animal may provide social support



Client Factors

Values, Beliefs, and Spirituality

Values/Beliefs

- Values and beliefs of humane treatment towards animals
- Following rules of public locations while with an animal

Spirituality/Beliefs

- Some animals are considered sacred or dirty
- Some believe in animal reincarnation

Body Functions

Mental Functions:

- Attending to the animal's needs
- Utilizing memory to appropriately care for animal
 - Remembering to feed, walk, groom animal
- Discriminating different sensations the animal may feel, smell, hear, see, or taste
 - Paws, tongue, tail, ears, nose
- Understanding the emotions of the animal
 - Angry, tired, sad, scared, etc.
- Knowing the energy level of the animal
- Motivation provided by the animal
- Orientation to a familiar animal

Sensory Functions:

- Visual processing skills to locate the animal and its supplies
- Sound detection and discrimination to locate the animal and its sounds
- Maintaining position and balance while doing activities involving movement with animal
- Smelling or sensing odors or scents associated with animals
- Awareness of own body position and animals while interacting with animal
- Feeling the various textures of different animals
- Awareness of pressure applied to animal while completing activities such as petting and grooming

Neuromusculoskeletal and Movement-Related Functions:

- Range of motion during activities with animals
- Maintenance and stability of structural joints in body needed during activities with animal
- Utilizing muscle power, tone, endurance and posture to engage in and complete activities with animals
- Maintaining gait patterns and mobility while walking animal
- Utilizing eye-hand and eye-foot coordination, bilateral integration, crossing midline, and fine and gross motor control to engage in activity with animals

Cardiovascular, Hematological, Immunological, and Respiratory System Functions:

- Increased/decreased blood pressure, heart rate, and respiratory patterns during different activities with animals
- Increased physical endurance and fatigue during physical activities with animals

Voice and Speech Functions:

- Producing sounds or words to give commands or talk to animals



Performance Skills

Motor Skills

- Engaging in activities with animals through movements that require stability, alignment, reaching, bending, gripping, manipulating, coordinating, moving, lifting, walking, transporting, enduring, and coordination of all required muscles
 - Bending to fill animals water dish
 - Reaching for animal's toy
 - Coordination to throw a toy for the animal
 - Gripping a leash while walking with the animal

Process Skills

- Inquiring about activities to do with the animals
- Initiating and pacing activities with the animals
- Sequencing steps and organizing animal's supplies to complete various activities
- Terminating activities with the animals
- Choosing, locating, and gathering necessary supplies or objects to complete activities with the animals
- Attending to the animal or the activity being done with the animal

Social Interaction Skills

- Approaching, initiating, regulating, and concluding conversations with others who have animals
- Interacting with animal through speech or gestures
- Managing, expressing, and responding to emotions felt related to the animal
 - Controlling anger when animal does not listen
- Acknowledging and looking at the animal



Performance Patterns

Habits

- Automatic tendencies/behaviors of feeding/walking animal at same time each day
- Spontaneously greeting the animal when approached
- Always praising animal for listening to a command

Routines

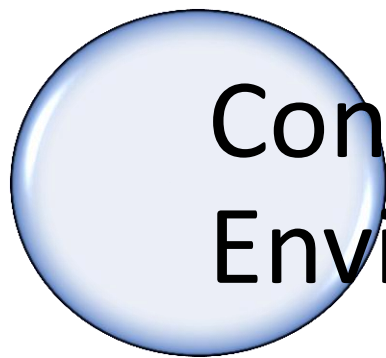
- Providing the animals with a structured schedule during regular activities
 - Feeding, brushing, exercising, grooming, etc.
- Enforcing and following a schedule for potty-training an animal
- Regularly attending obedience classes for animal

Rituals

- Some animals are considered sacred and are included in specific rituals

Roles

- Animals play different roles to various people
- Set of behaviors expected by society for a pet owner and caretaker



Context and Environment

Cultural

- Customs, beliefs, behavioral standards, activity patterns, and expectations accepted by a society in relation to an animal
- Animal interaction may or may not be appropriate in the society of some cultures
- Some cultures maintain symbolic values of animals

Personal

- An individual may have a fear of the animals or loves animals
- Individual who owns an animal outside of therapy context or does not own an animal
- Individual who is a volunteer at the humane society

Temporal

- An individual who may have owned an animal for 10 years or 1 year

Physical

- Environments physically available to engage in activities with an animal
- Objects available in the environment for engaging with animal
- Building, park, toys, supplies, etc.

Social

- Relationship with the animal
- Expectations while engaging in activity with the animal
- Expectations in the role of a caretaker or pet owner



Activity Demands

Relevance & Importance to Client

- Determining if AAT is in alignment with the clients goals, beliefs, needs, and values
- Some individuals dislike animals and may not be motivated by them

Objects and Their Properties

- Tools and supplies needed during activities with animals
 - Leashes, food and water dishes, brushes, toys, etc.
- Considering textures, size, and shapes of supplies for animals

Space Demands

- Required physically environments relating to arrangement, size, surface, lighting, temperature, and noise for various activities
 - Larger space for throwing toys for animals
 - Adequate lighting for grooming animals

Social Demands

- Elements of the social environment required for engaging in activities with animals
- Rules related to interaction with the animal
 - Humane treatment
- Expectation of animal's behavior

Sequencing and Timing

- Processes required to carry out the activity with the animal
- Completing appropriate steps of an activity
 - While grooming first soap animal, then rinse animal, finally dry animal
- Determining appropriate time and needed duration to complete activity

Required Actions & Performance Skills


- Specific performance skills needed to engage in an activity with the animal
- Choosing appropriate activity
- Gripping toys or supplies for animal
 - Holding leash, treat, food or water dish, etc.
- Determining how to coordinate muscles to complete activities with the animals
- Adjusting tone of voice when scolding or praising the animal
- Adjusting pressure or force applied to animal or objects for animals

Required Body Functions

- Physiological functions needed to engage in activity with animal
- Mobility of joints and range of motion required for completing activities with animals
- Cognitive skills needed to participate in various activities with animal

Required Body Structures

- Anatomical parts of the body required to support engagement in activities with animals
- Compensatory strategies or devices required to complete activities with animals



Animal Handlers and Authorized Users

According to Karma Dogs (n.d.) and Animal Assisted Intervention International (2013) animal handlers are individuals who have been trained and have experience with handling the animal. The handler may be a volunteer who brings his or her registered animal to work with the healthcare professional or the healthcare professional may be the handler him or herself (Karma Dogs, n.d.; Animal Assisted Intervention International, 2013). There are benefits and drawbacks to being a handler and a healthcare provider. A benefit is that the healthcare provider will not have to schedule a time with a volunteer to bring the animal in, whereas a drawback is having to manage both the client and the animal simultaneously (Karma Dogs, n.d.). This is something that may be determined by each individual facility.

All members of the interprofessional healthcare team work together on common goals to improve each patient's outcomes (Bridges, Davidson, Odegard, Maki, & Tomkowiak, 2011). Teamwork within neurorehabilitation has proven to have many benefits such as increased problem solving and goal directed activity, improved motivation and patient centered care, and improved outcome of interventions (Suddick & De Souza, 2006). Animal-assisted therapy may be utilized by all members of the interprofessional healthcare team who have a level of competency related to AAT.

Physical Therapy

The American Physical Therapy Association (APTA) (2013) states that physical therapists are health care professionals who assist in restoring mobility and decreasing pain. Physical therapists work in a wide variety of settings to improve a patient's capacity to move, re-establish function, diminish pain, and inhibit disability (APTA, 2013). Due to the physical benefits of AAT physical therapists may be healthcare professionals who want to incorporate AAT into therapy sessions. Physical benefits of AAT that physical therapists should be aware of are:

- Increase in balance, walking speed, walking distance, gait patterns, trunk control, and transfer training
 - Abate et al., 2011; Abbud et al., 2014; Bode, Costa, & Frey, 2007; Rondeau et al., 2010

Physical therapists may want to consider the use of AAT to improve coordination, increase strength, facilitate use of limb, and improve hand/eye coordination. Physical therapists may do this through:

- Petting an animal
- Holding a leash and walking the animal
- Brushing the animal
- Positioning animal on affected side to encourage use of affected extremity
- Assist animal through obstacle course
- Throw toys for animal to retrieve
- Play tug-a-war with the animal

* Physical therapists may be authorized users of AAT if they plan, establish, organize, and carryout specific goal-directed activities that match their client's goals. Physical therapists also must prove competent in skills necessary for use of animals during therapy.

Speech Language Pathology

Speech Language Pathologists (SLPs) are concerned with preventing, assessing, and treating clients with social communication, speech, language, swallowing, and cognitive disorders (American Speech Language Hearing Association, 2015). Speech Language Pathologists assist clients in initiating speech, encouraging use of questions, improving descriptive skills, increasing ability to organize and problem solve, as well as increasing short-term/long-term memory (Gerth, n.d.). For this reason SLPs may benefit from the implementation of AAT. Benefits of AAT include:

- Facilitation of verbal and non-verbal communication
 - Hall & Malpus, 2000; Kovacs, Kis, Rozsa, & Rozsa, 2004; LaFrance et al., 2007; McNicholas & Collis, 2000
- Motivation for engagement in social interactions
 - Macauley, 2006; Martin & Farnum, 2002; Richeson, 2003; Sams et al., 2006; Wood et al., 2005
- Increased social functioning
 - Barak, Savorai, Mavashev, & Beni, 2001

SLPs may improve a client's communication, social participation, social interactions, and cognition by having the client:

- Introduce self and animal to others
- Teach the animal commands
- Create an obstacle course or a care plan for the animal
- Learn gentle ways to handle the animal
- Recall specific facts about the animal

* Speech Language Pathologists may be authorized users of AAT if they plan, establish, organize, and carryout specific goal-directed activities that match their client's goals.

Speech Language Pathologists also must prove competent in skills necessary for use of animals during therapy.

Occupational Therapy

Occupational therapists provide care in a holistic manner addressing all aspects of the client. Occupational therapists are concerned with the physical, emotional, social, and psychological aspects of a client (AOTA, 2014). Animal-assisted therapy has been shown to improve each of these aspects in a variety of clients across different settings (Miller & Ingram, 2000; Diefenbeck, Bouffard, Matukaitis, Hastings, & Coble, 2010). Benefits of AAT for occupational therapists concerned with psychological aspects include:

- Learning new skills
- Increasing self-confidence
- Establishing a feeling of self-worth
- Decreasing stress and anxiety

During rehabilitation in a physical disability setting, the use of AAT can be used in all aspects of the session to address a variety of different goals. Physical goals that AAT may be incorporated into occupational therapy could include:

- Improving fine/gross motor skills
- Crossing midline
- Body awareness
- Encourage use of affected limb
- Increasing visual perceptual skills and tactile tolerance

The use of AAT can be easily tailored to meet the needs of the individual or the goal in order to elicit the most beneficial outcome. Therefore, incorporating AAT can be of high benefit to almost all occupational therapists.

*Occupational therapists may be authorized users of AAT if they plan, establish, organize, and carryout specific goal-directed activities that match their client's goals. Occupational therapists also must prove competent in skills necessary for use of animals during therapy.

Skills Competency

Animal-Assisted Therapy (AAT)

Recommended Completion
Time _____

Pre-requisites: Attended “In-service”
training

OBJECTIVES- Upon completion the
participant: Will be able to utilize AAT
as a means of goal directed therapy to
achieve patient and therapy goals

Name: _____

ID# _____

Dept: _____

Education Points _____

Issued By: _____

Date: _____

Reviewed Date _____

SKILL	DATE	VALIDATOR
1. Identify indication for use of animal within goal directed therapy		
2. Discuss precautions/contraindications		
3. Discuss measures taken in case of accident/emergency		
4. Demonstrate proper hygiene protocols for self, client, animal, and room/equipment		
5. Discuss how animal will be incorporated into treatment intentions or with protocols of client		
6. Discuss parameters of therapy session (time length, location, etc.)		
7. Demonstrate necessary commands for animal to follow		
8. Demonstrate introduction of animal into therapy session		
9. Discuss/demonstrate specific preparatory, purposeful, and occupation based interventions to be used with specific goals of client		
10. Describe documentation		

Date: _____ All of the above points have been met

Validator Initials _____ Validator Signature _____

Title _____

Validator Printed Name _____ or ID# _____

Policy and Procedure

- I. **Purpose/Expected Outcome**
 - a. To provide guidelines to ensure that animals allowed in the hospital meet infection prevention and animal safety guidelines
- II. **Definitions:**
 - a. Animal-Assisted Therapy Dog: A dog that has been trained and evaluated to safely interact with individuals for a goal directed benefit in the use of therapy. Therapy dogs are required to have gentle dispositions, greet people calmly, respond to basic verbal or hand commands, walk on a loose leash, pass a yearly review of skills and veterinary exams, and have liability insurance coverage.
 - b. Animal-Assisted Activity Dog: Dogs used in recreational visits for educational or motivational benefits to increase quality of life with no specific goals.
- III. **Authorized Users:**
 - A. Authorized users are required to attend an in-service for education on animal-assisted therapy as well as demonstrate ability by completing the skills competency
 - a. Occupational Therapists
 - b. Occupational Therapy Assistants
 - c. Physical Therapists
 - d. Physical Therapy Assistants
 - e. Speech-Language Pathologists
- IV. **Equipment:**
 - a. Certified/Trained Animal
 - b. Collar/Leash
 - c. Access to water (dish)
 - d. Therapy Animal Identification
 - e. Kennel
 - f. Grooming supplies
 - g. Toys and other materials specific to goal of therapy session
- V. **Precautions**
 - a. Clients attitude/tolerance toward animals
 - b. Infection control
 - c. Client's precautions regarding medical conditions
 - d. Hygiene of animal
 - e. Overworking animal
- VI. **Contraindications:**
 - a. Allergies

- b. Cultural beliefs
- c. Open wounds
- d. Compromised immune systems

VII. **Indications:**

- a. To enhance physiological, psychological, physical, and social well-being
- b. To improve fine/gross motor skill
- c. To increase balance, coordination, and gait patterns
- d. To promote social interactions as well as verbal and non-verbal communication skills
- e. To decrease stress and anxiety
- f. To increase self-esteem, motivation, and confidence

VIII. **Policy:**

- a. Animal-assisted therapy dogs and handlers must belong to a nationally recognized therapy dog organization that provides liability insurance, screening of skills, and dog health assessment criteria.
 - i. Animal-assisted therapy dog owner is responsible to present a certificate of health that abides by the national organization's standard guidelines.
 - ii. The handler will be a hospital volunteer and receive orientation prior to the dog's first visit.
 - iii. Employees may become handlers, but they are also volunteers and must complete the volunteer intake process.
- b. Animal-assisted therapy dogs are **not** permitted in the following areas:
 - i. Food preparation/storage areas
 - ii. Rooms of patients with Neutropenic precautions
 - iii. Medication storage and/or preparation areas
 - iv. Clean/sterile supply areas
 - v. Labor and Delivery rooms, nursery
 - vi. Dialysis and Burn Unit, except under special circumstances with the agreement of the patients' physician(s)
 - vii. Bone Marrow Transplant Units
 - viii. Invasive treatment areas to include: surgery, PACU, NICU, cath lab, interventional radiology, and endoscopy
- c. Animal-assisted therapy dog handlers must be able to demonstrate that their dog has the following skills:
 - i. Respond to verbal and/or hand signals
 - ii. Walk calmly on a loose leash by handlers side
 - iii. Wait at a doorway on command
 - iv. Greet a stranger by sitting on command and allowing to pet
 - v. Down on command
 - vi. Leave it command (food)
- d. The animal-assisted therapy dog must be on a leash and under the direct supervision of the handler at all times.
- e. The animal-assisted therapy dog will be bathed and/or groomed the day of the visit.

- f. The handler and the animal-assisted therapy dog will wear attire consistent with hospital policy for volunteers, including picture ID badge.
- g. Any incident of accident, injury, or confrontation with the animal-assisted therapy dog must be reported to the facility and the national therapy dog organization through which the dog is registered.
- h. Any animal-assisted therapy dog that displays the following behaviors will have its privileges suspended until documentation of further evaluation, training, and review is produced:
 - i. Lunging at someone
 - ii. Growling
 - iii. Excessive barking
 - iv. Jumping on people
 - v. Excessive pulling on leash
 - vi. Snapping, nipping, or baring teeth
 - vii. Unsafe interactions toward people or other animals
 - viii. Excessive command refusals
 - ix. Trembling and tail tucking

IX. Procedure/Interventions:

- a. Healthcare professionals:
 - i. Indicate need for animal-assisted therapy in relation to client's therapeutic goal
 - ii. Inform patient of intention of animal-assisted therapy
 - iii. If treatment is occurring in room, ask the patient (and roommate if applicable) for permission to enter room
 - iv. Gain permission from patient to utilize animal-assisted therapy in treatment sessions
 - v. Obtain dog from appropriate location and introduce animal to client following proper protocol
 - vi. Perform preparatory, purposeful, and/or occupation based interventions in a therapeutic manner
 - vii. Provide sanitizer for hand hygiene before and after visit
 - viii. Conclude therapy sessions appropriately and return animal to designated area
- b. Animal-assisted therapy dogs:
 - i. Assemble equipment:
 - 1. Hand sanitizer
 - 2. Leash/harness
 - 3. Hospital picture ID
 - 4. Therapy Dog cards
 - 5. Registration ID tag

X. Procedural Documentation:

Therapeutic gains made with animal-assisted therapy (dog as modality)

AAT Requirements and Eligibility

A therapy animal has to be trained and evaluated for safe interaction with clients for a therapeutic benefit. The remainder of this section will focus on using a dog as a therapeutic modality. In general therapy dogs should:

- Respond to basic verbal or hand commands
- Have a gentle temperament
- Meet people in a calm manner
- Pass yearly veterinary exams
- Walk with a loose leash
- Pass a yearly review of skills
- Have liability insurance coverage

Specific requirements for certifying an AAT dog may be done through various organizations such as Therapy Dogs International, Pet Partners, or Therapy Dogs Incorporated. The requirements vary depending upon the organization which certifies the dog. The requirements that will be listed will be from Therapy Dogs Incorporated as this is the only organization with evaluators available in the Midwest.

Therapy Dog Inc. Requirements

Qualifications of the dog in order to become a registered by Therapy Dog Inc. include:

- Friendly dog of any breed or mix
- Good around other dogs
- Must be one year of age or older to be tested
- Listen to their handlers
- Allow strangers to touch them
- Not jump on people when interacting
- Walk on a leash without pulling
- Not mind strange noises or smells
- Be calm for petting
- Not be afraid of people walking unsteadily
- Be current on all vaccines required by local laws
- Have negative fecal test every 12 months
- Be clean and well groomed

The process of becoming a member begins with a test completed by one of the observers in the area. The test includes a handling section in which the dog's basic manners and the owners handling skills are tested. Items to bring during the initial test with the observer include:

- Therapy Dogs Inc. Member Application
- Release of Claims Form for Accidental Injury
- Therapy Dogs Inc. Test
- Copy of Proof of Rabies Vaccination
- Proof of Negative Fecal Exam within the last 12 months signed and dated by veterinarian or clinic
- Four foot or shorter leash and a Therapy Dog Inc. approved collar

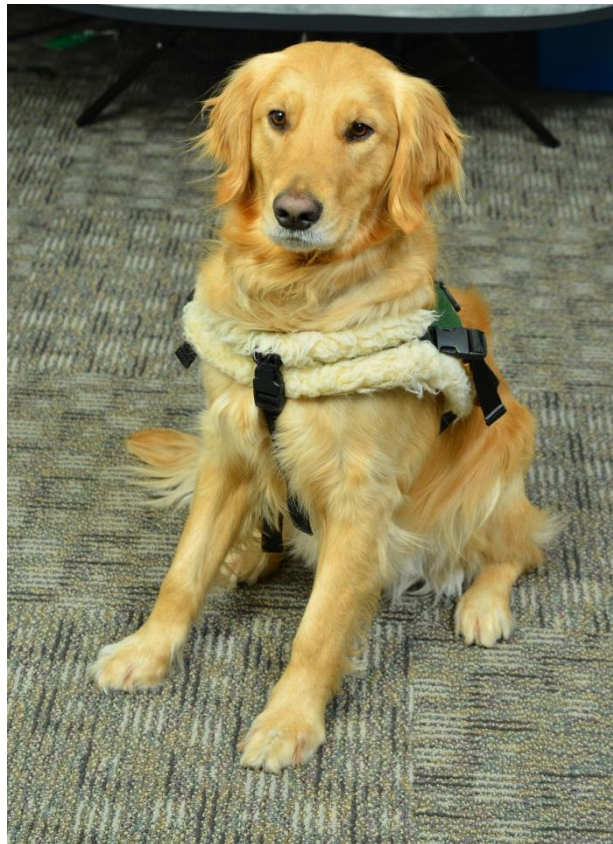
During the initial test the observer is looking at various aspects of how the handler controls the dog and how the dog behaves. The observer takes the following into consideration:

- Handler's attention to instruction
 - Did handler bring approved collar and leash
 - Was handler clean and dressed appropriately
- Initial meeting

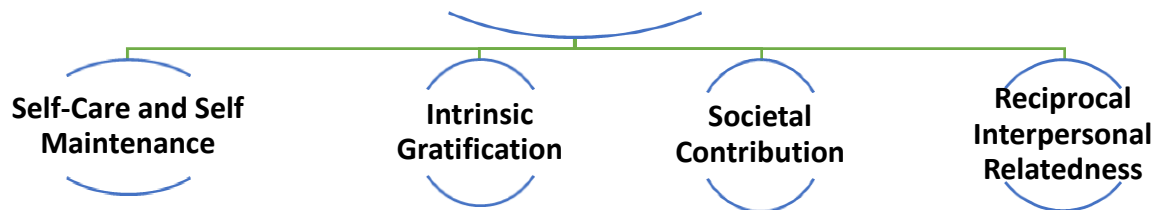
- Was handler in control
- Were dog and handler polite
- Was dog corrected for poor behavior and praised for good behavior
- Canine-human behavior
 - Did dog bark at a friendly stranger
 - Was dog interested in the person
 - Any sign of aggression demonstrated towards stranger
 - Did handler correct or praise dog if needed when interacting with stranger
- Physical handling of the dog and dog's response
 - Small dogs held or lifted
 - Petting head, throat, body, and tail with both hands
 - Touching paws
 - Holding ears
- Handler control of dog with loose leash
 - Team moving forward, changing pace from normal to slow to quick, making left and right turns, and turning around
 - Stopping with dog at handler's side for 5 seconds
 - A person running past the dog and handler from front, back, and sides
 - By a person walking unsteadily
 - Handler and dog approaching a seated person
- Canine-canine behavior
 - Introducing another dog to handler and dog being tested
 - Was handler in control
 - Did the dog bark at the other dog
 - Was the dog interested in the other dog
 - Any sign of unprovoked aggression demonstrated
 - Did handler correct or praise the dog if needed
- Dog's apparent responsiveness
 - Did dog demonstrate a willingness to participate in exercises
 - If initially excited did dog calm down
 - Did dog exhibit signs of avoidance or stress during test
- Does handler have the ability to safely handle the dog
- Did the handler follow your instructions during the handling portion of test

If the handler and the dog both pass the handling section of the test the next step is interacting with residents or strangers during three supervised visits. Two of the three must be done at a medical care facility and must be done on separate days. After this the handler sends the membership packet to the Therapy Dogs Inc. where the team may be accepted for membership into the organization. Once accepted the newly registered team will receive a membership card, certificate, and heart shaped tag for the dog's collar. Once the team receives these items they may begin working within the medical center.

Occupation Based Intervention using Animal- Assisted Therapy



Lifestyle Performance Model



The Lifestyle Performance model is based on a phenomenological approach with a primary focus on a person's assets and strengths rather than his or her challenges (Velde & Fidler, 2002). The model places significant emphasis on a person's quality of life. Additionally, the Lifestyle Performance model stresses the importance of identifying a person's interests, capacity, and strengths in order to develop a habitual pattern of daily living that enhances quality of life. Key elements within the Lifestyle Performance model include activities, occupation, and environment. Activities are understood as having real and symbolic meaning to an individual, occupations are considered to be the complex process of being engaged in doing the activity, and the environment includes the political, temporal, physical, and sociocultural components. The environment also highlights key concepts that must be included to provide a person with optimal quality of life including autonomy, individuality, affiliation, volition, and self-efficacy (Velde & Fidler, 2002).

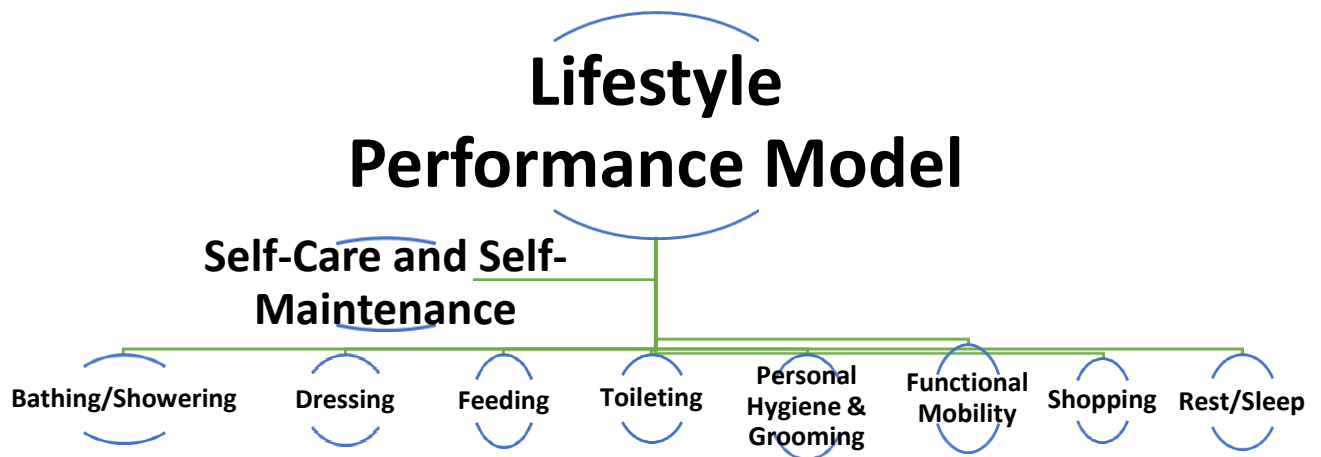
The Lifestyle Performance model was chosen to guide this product as AAT incorporates the utilization of a person's strengths through engagement in meaningful occupations. Through the utilization of AAT a person is able to emphasize his or her assets while using the dog as a source of motivation to increase quality of life. Animal-assisted therapy has been proven to increase motivation, self-esteem, social participation, and independence which provides individuals with the essential environmental elements outlined in the model which are necessary for optimal quality of life (Abbud et al., 2014; Banks et al., 2008; Chu et al., 2009; Hall & Malpus, 2000; Mill & Hall, 2014; Velde & Fidler, 2002). Additionally, the Lifestyle Performance model is divided into four main

domains; Self Care and Maintenance, Intrinsic Gratification, Societal Contribution, and Reciprocal Interpersonal Relatedness. The four domains represent the principle reasons around which daily living is constructed including relevant activities, unique capacities and interests of the individual, along with social norms (Velde & Fidler, 2002).

The intent of this intervention section is to provide occupational therapists with a quick reference guide to incorporate AAT into treatment sessions while continuing to focus on the occupational goals of each client. Although AAT is suited for use by a multidisciplinary team, the interventions outlined in this section are intended to be provided by an occupational therapist.

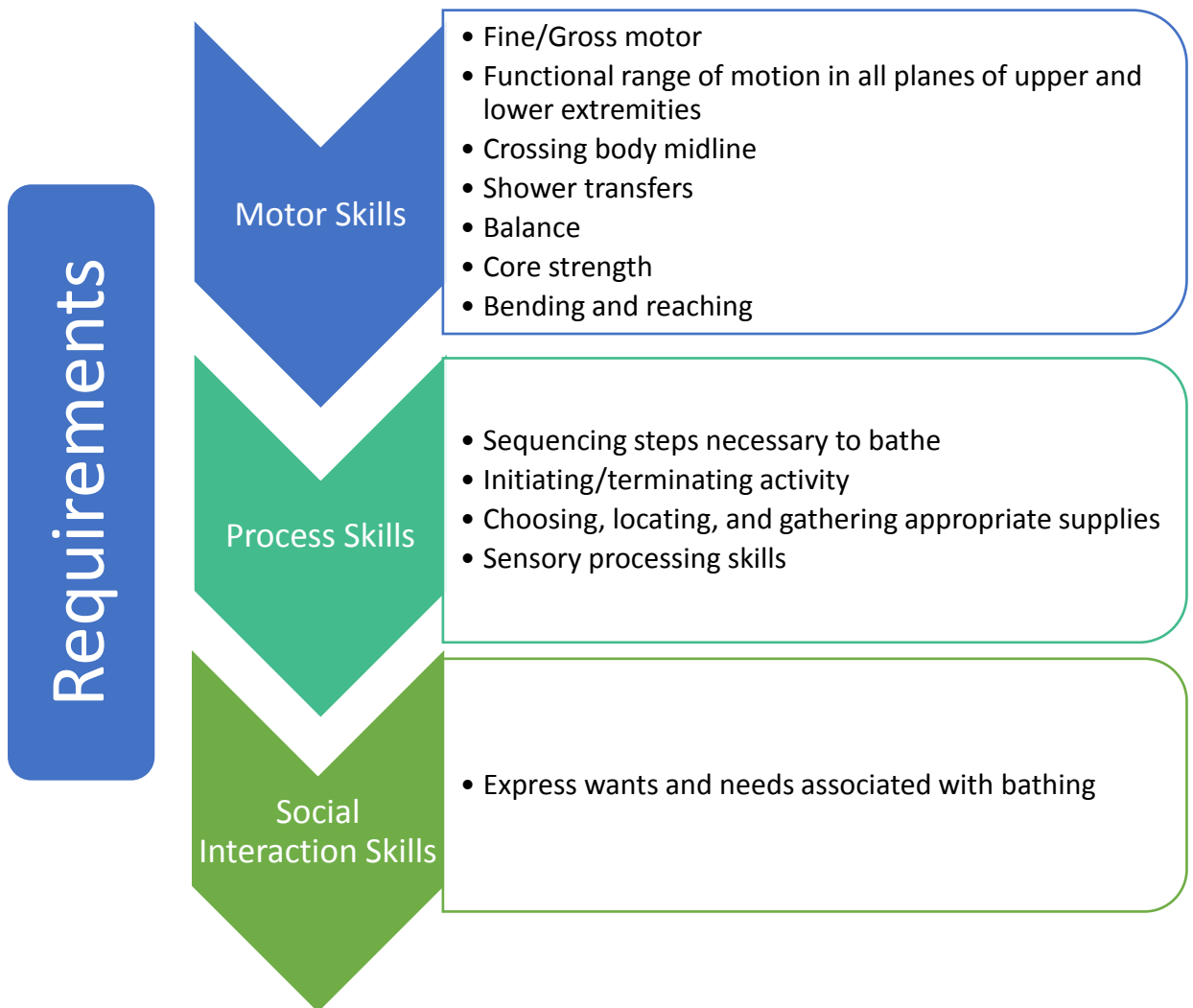
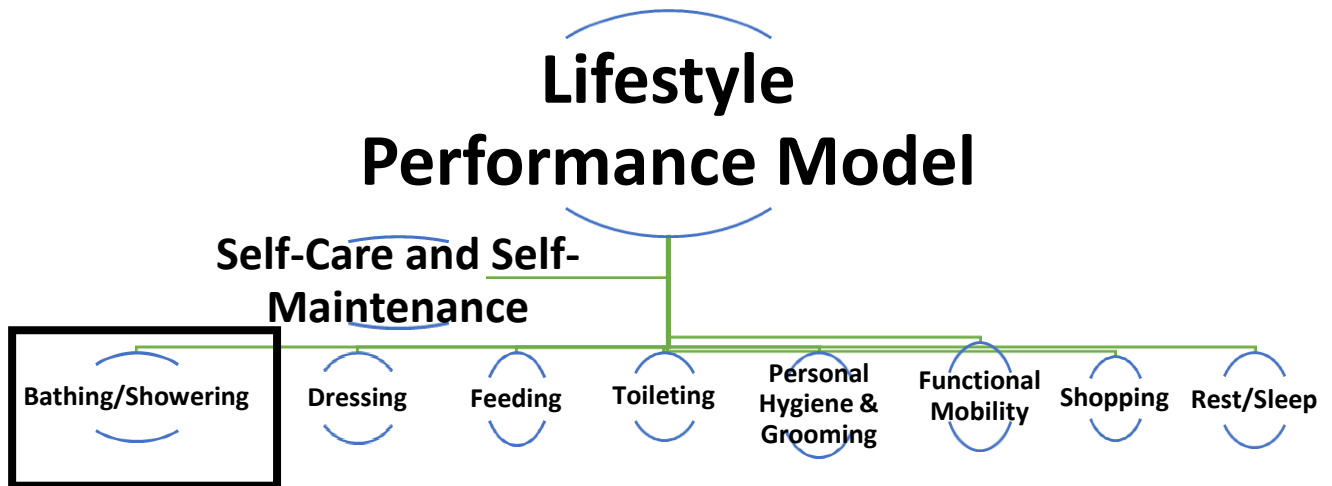
The interventions have been divided into the four domains outlined in the Lifestyle Performance model. Within each of these domains, areas of occupation that are included with the OTPF have been incorporated into the respective domains. Emphasis has been placed upon the activities of daily living as that is a primary area of concern for clients with neurological impairments as was suggested through feedback gathered from clinicians at a Midwestern hospital.

Within each of the four domains, the corresponding occupations have been broken up separately into the required performance skills including motor, process, and social interactions skills that are necessary to complete each occupation (AOTA, 2014). These specific skills are then used as the basis for identifying AAT interventions to be used in goal directed therapy in order to assist the client in reaching the highest level of independence. The interventions are not necessarily occupation specific, but rather specific to each performance skill needed to complete the desired occupations.

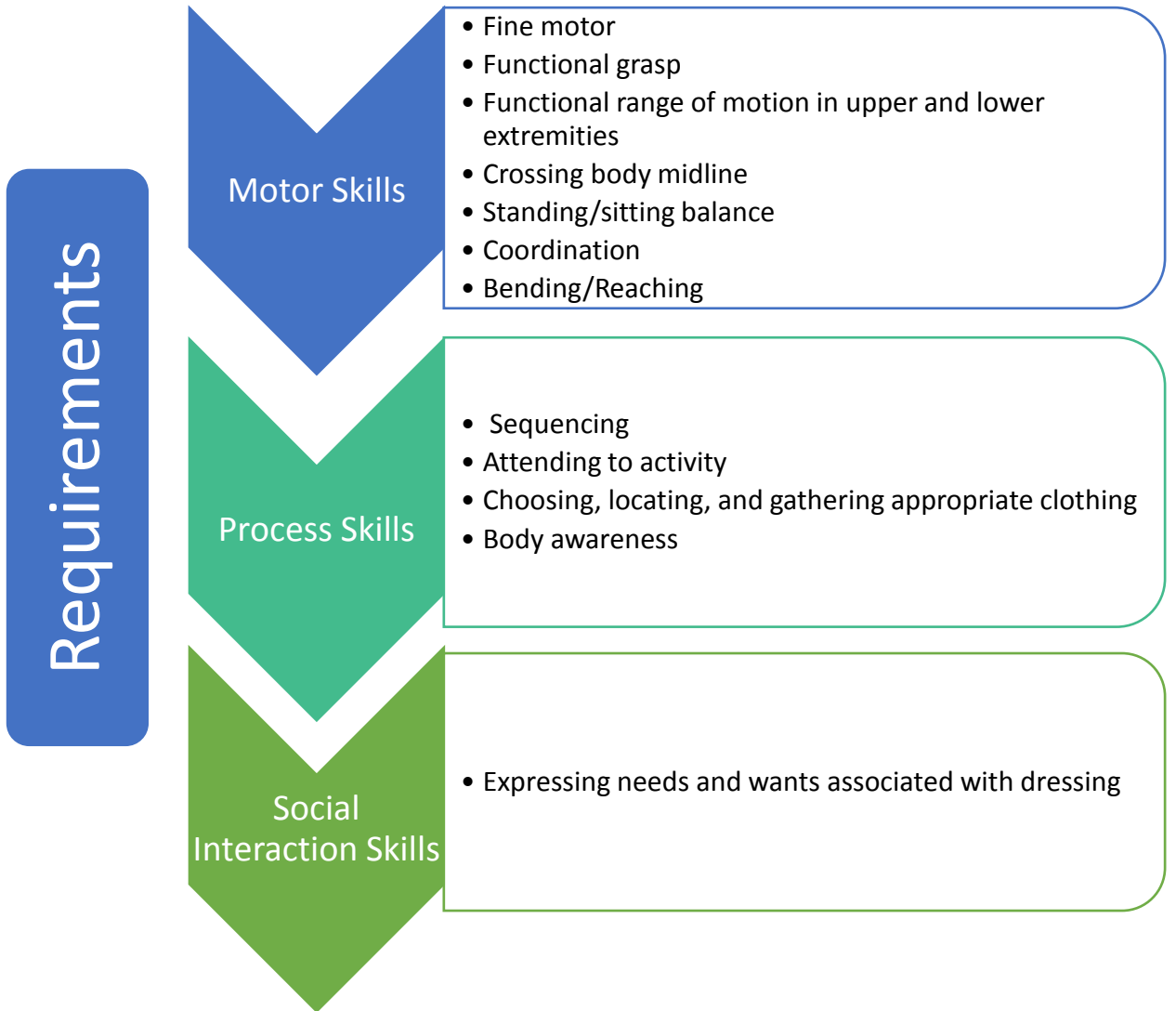
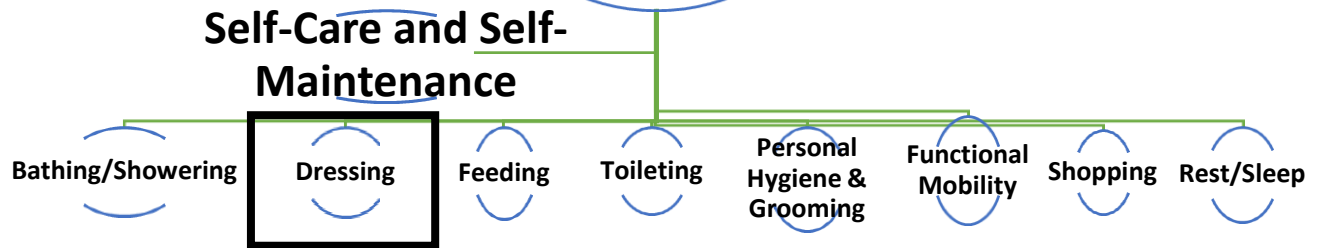


The first domain within the Lifestyle Performance model is titled *Self-Care and Self-Maintenance* (Velde & Fidler, 2002). This domain is comprised of activities focused on caring for and maintaining the self in a self-dependent manner. In self-dependence, the person is capable of articulating and acknowledging his or her personal needs to ask for assistance if unable to complete the task independently. Activities within this domain include functional activities of daily living that may include toileting, bathing, dressing, grooming, sleeping, food preparation, money management, and transportation. According to Velde and Fidler, (2002) being aware of one's wants and needs increases a person's satisfaction regarding the activities within this domain. The activities that are included in this product, in correlation with the OTPF, under the self-care and self-maintenance category include: bathing/showering, dressing, feeding, toileting, personal hygiene and grooming, functional mobility, shopping, and rest/sleep as these are all primary concerns of self-dependent living of those with neurological impairments.

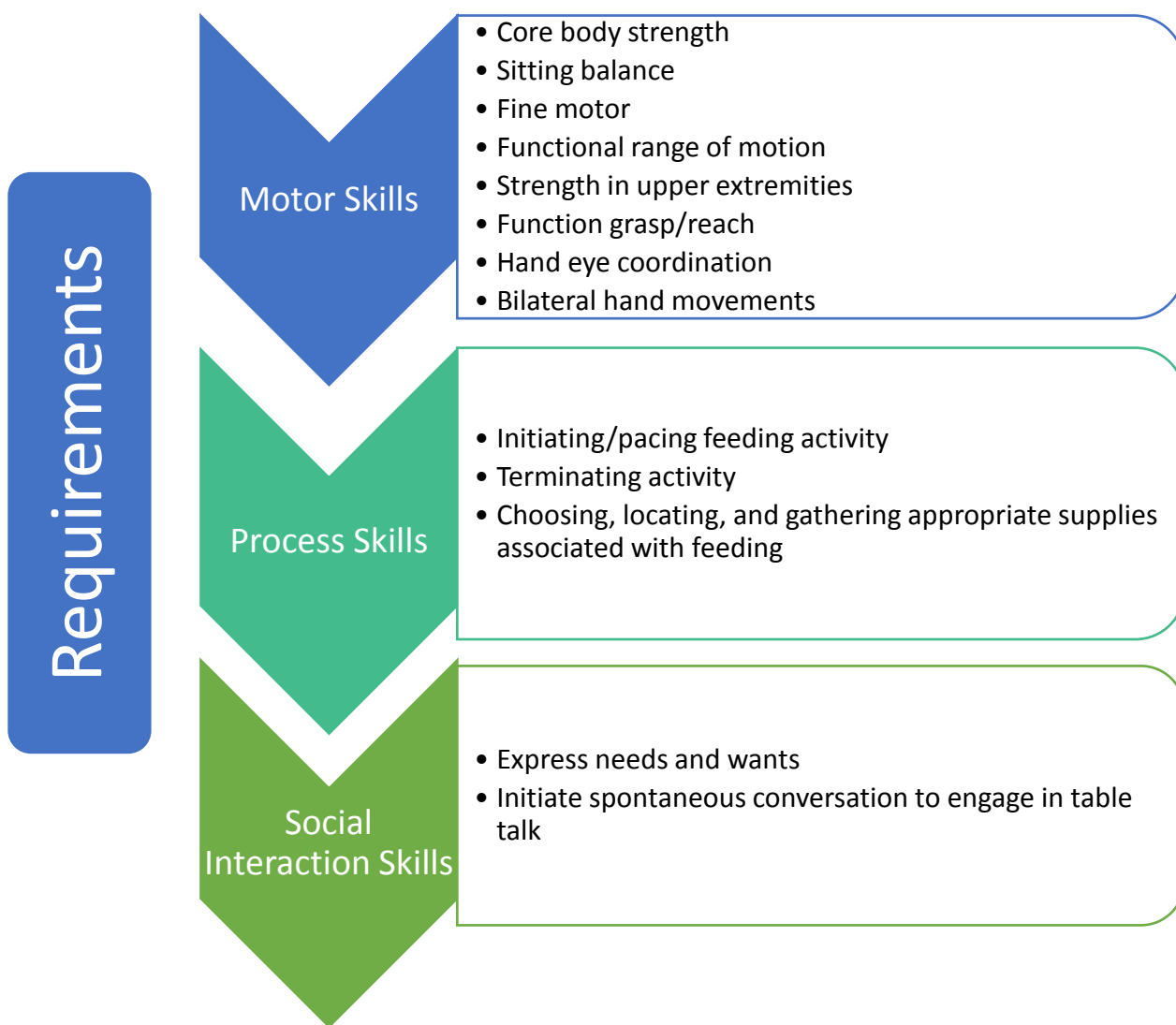
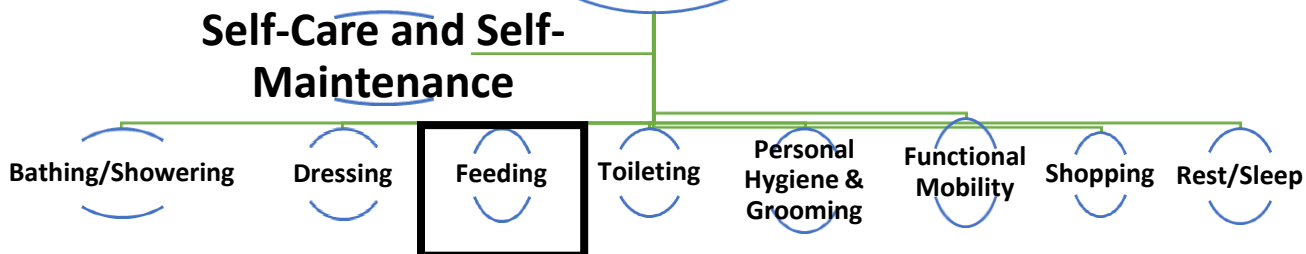
Lifestyle Performance Model



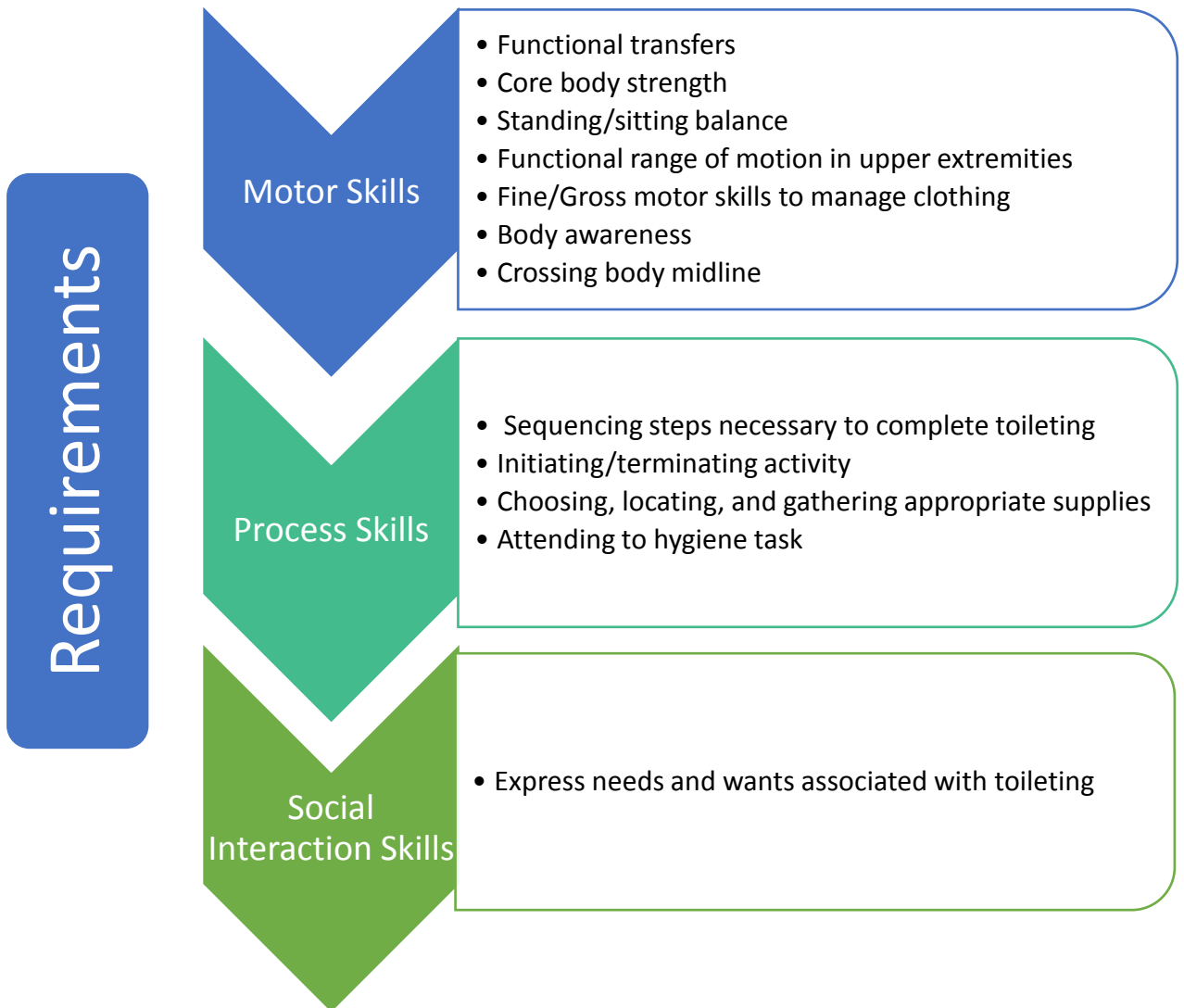
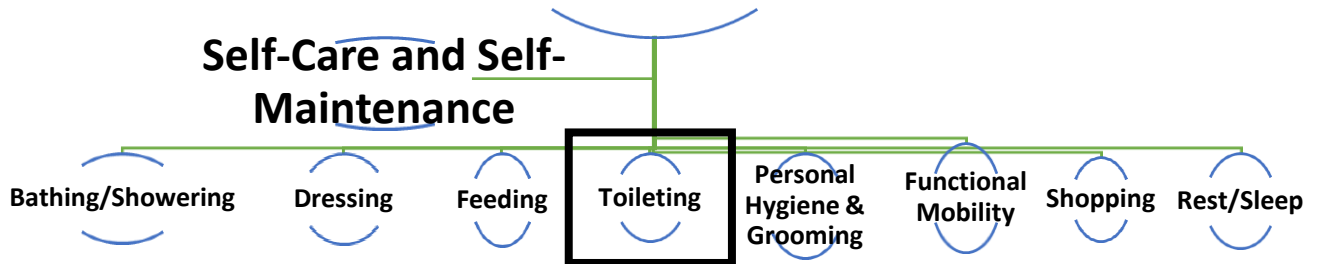
Lifestyle Performance Model



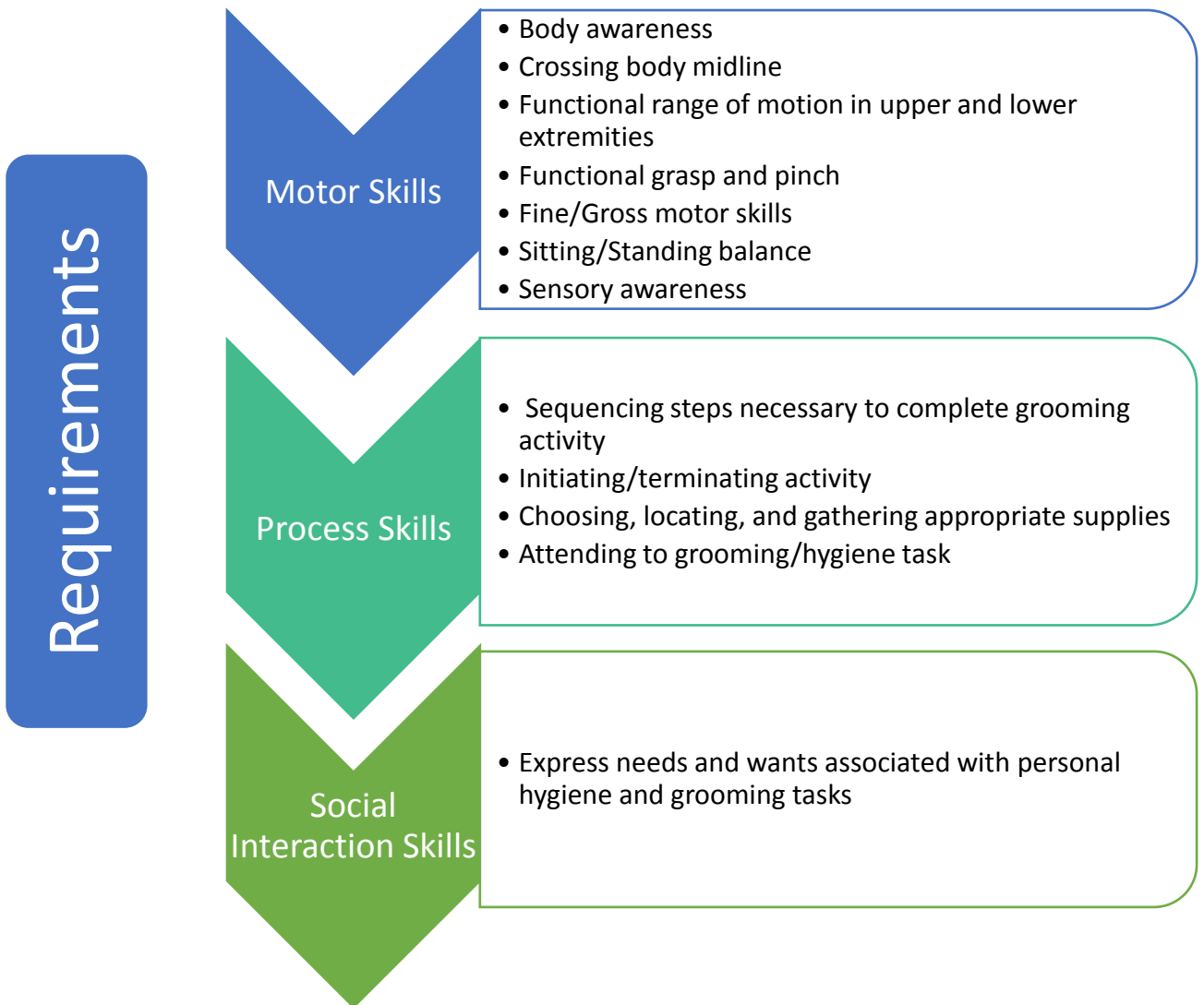
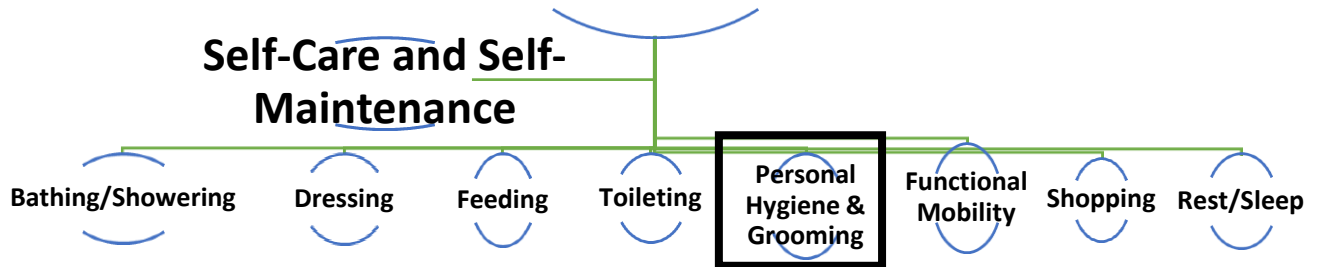
Lifestyle Performance Model



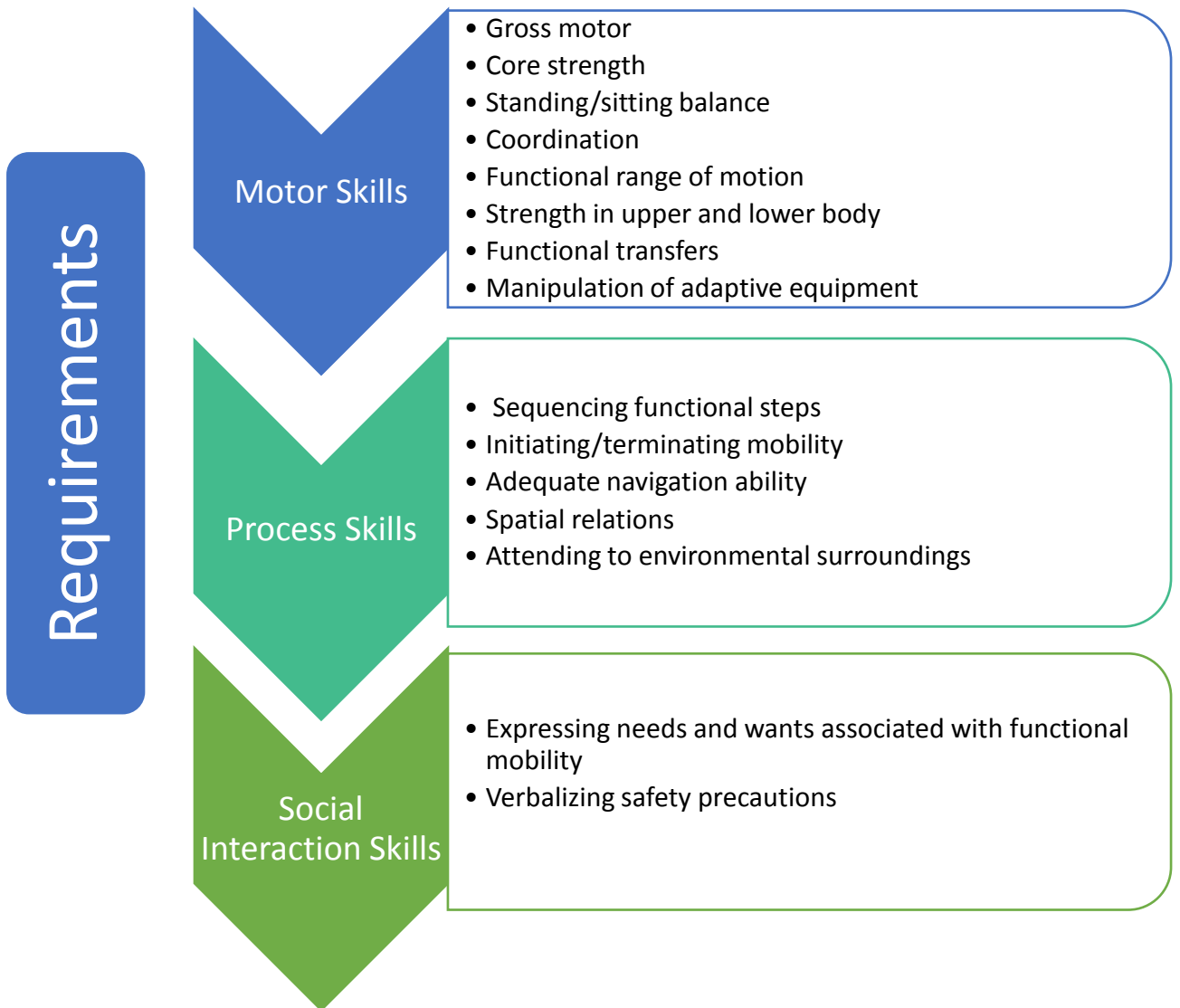
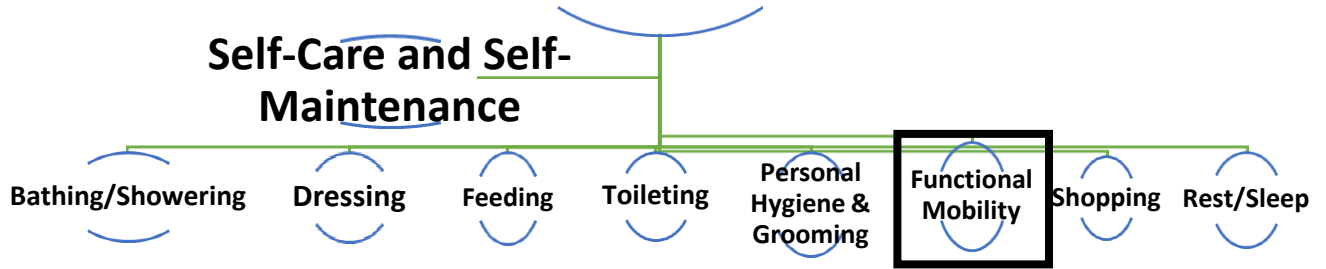
Lifestyle Performance Model



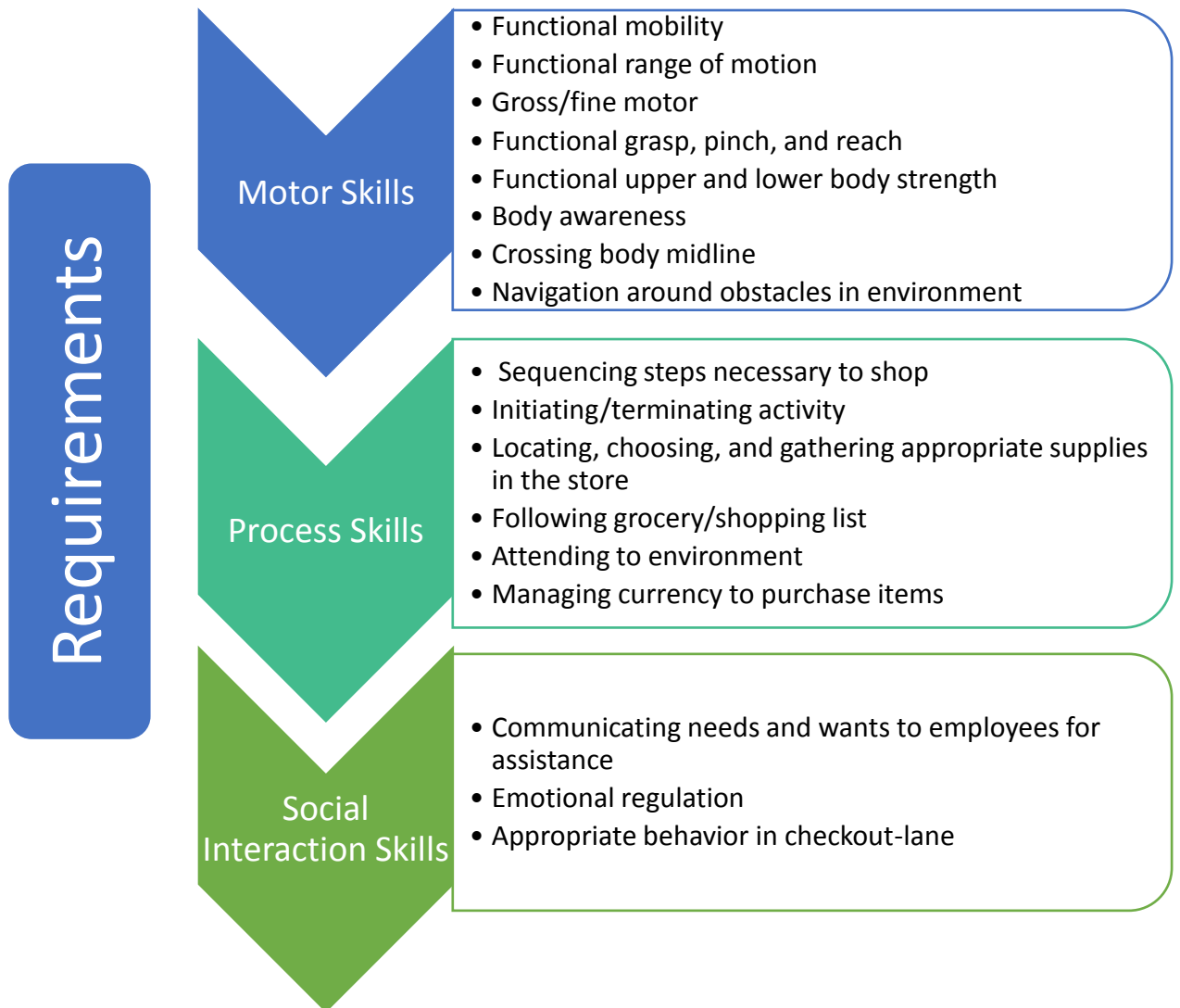
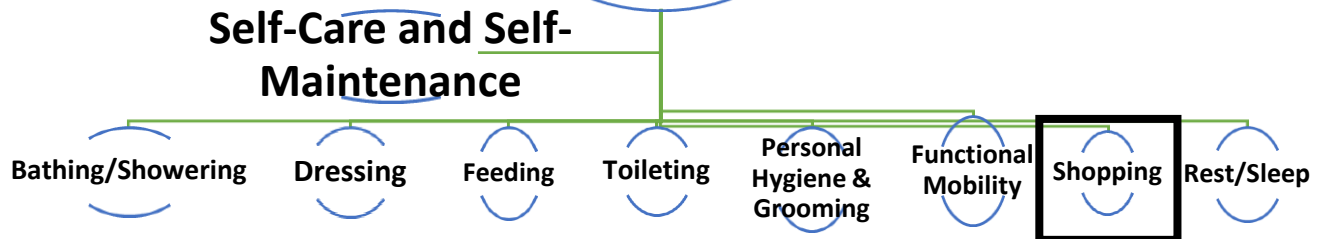
Lifestyle Performance Model



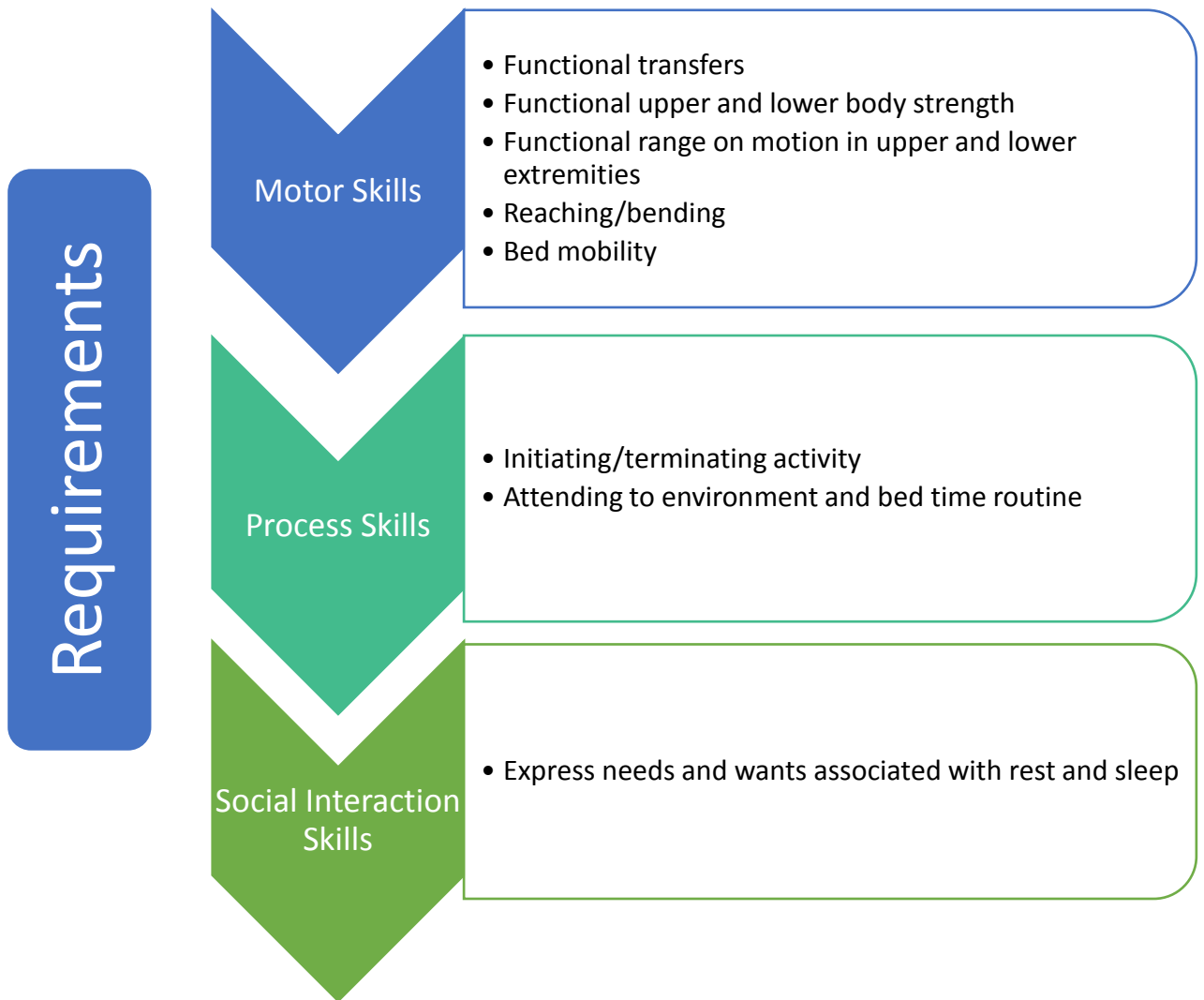
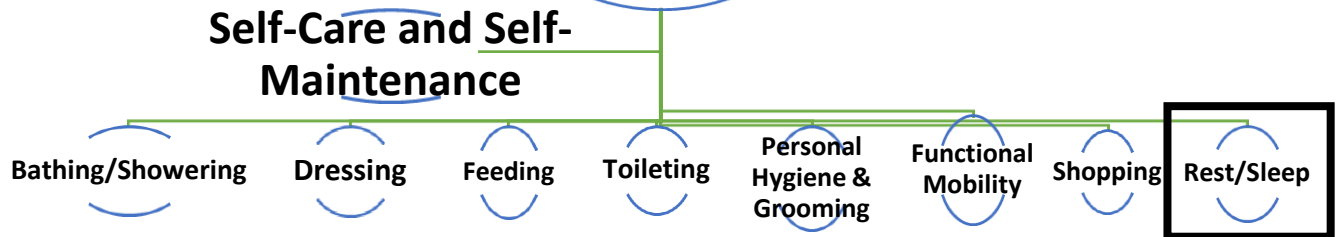
Lifestyle Performance Model



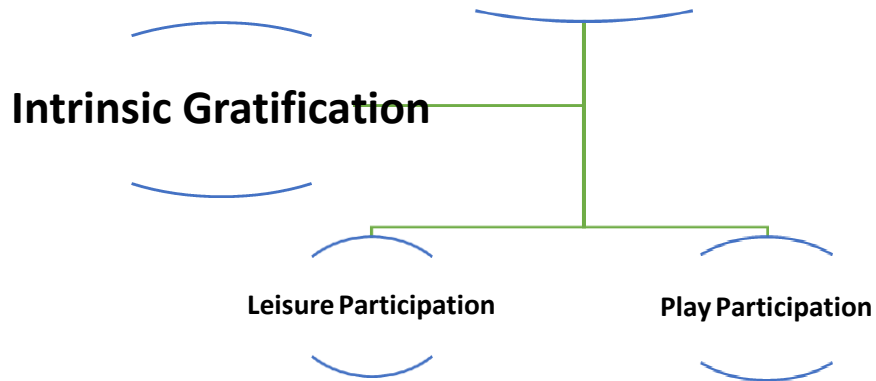
Lifestyle Performance Model



Lifestyle Performance Model

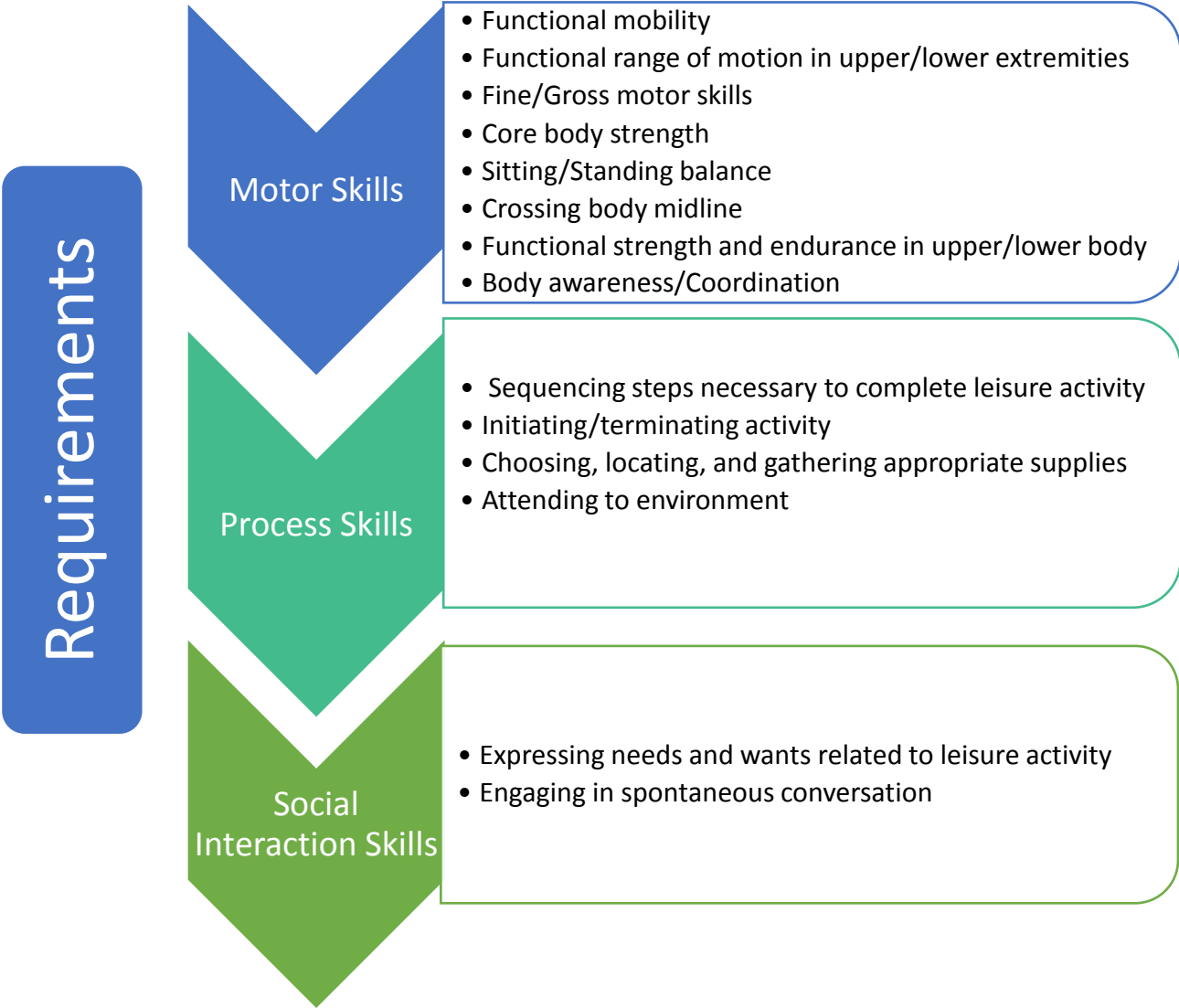
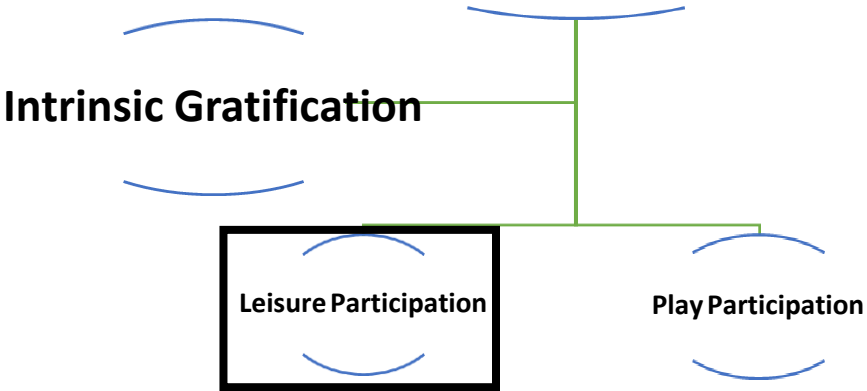


Lifestyle Performance Model



The domain of *Intrinsic Gratification* comprises the activities that are pursued solely due to a person's pleasure and enjoyment (Velde & Fidler, 2002). These activities may include, participating in sporting events, attending cultural practices, reading a novel, physical exercise, or a vacation. Satisfaction within this domain is achieved when persons are able to identify needs and wants associated with pleasure and enjoyment. Velde and Fidler (2002) described that the domain of Intrinsic Gratification is the first to be eliminated from a person's daily life when there is a challenge of balancing between all life activities. For the purpose of this product, the occupations corresponding to the OTPF included with this domain are leisure participation, and play participation.

Lifestyle Performance Model



Lifestyle Performance Model

Intrinsic Gratification

Leisure Participation

Play Participation

Requirements

Motor Skills

- Functional mobility
- Functional range of motion in upper/lower extremities
- Fine/Gross motor skills
- Core body strength
- Sitting/Standing balance
- Crossing body midline
- Functional strength and endurance in upper/lower body
- Body awareness/Coordination

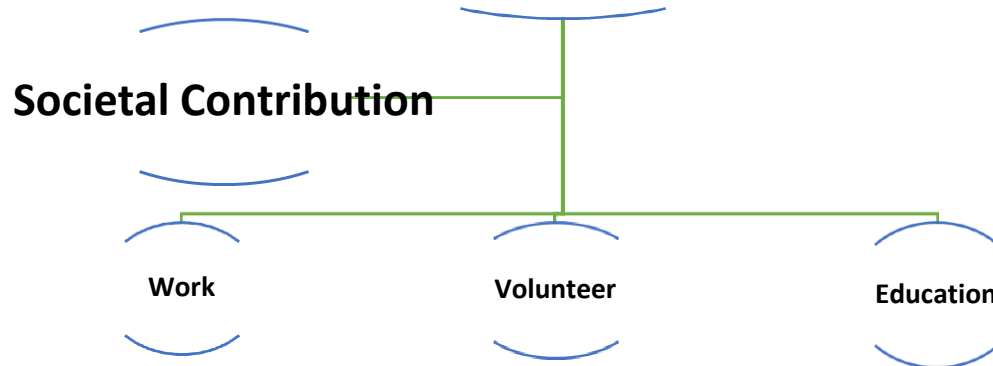
Process Skills

- Sequencing steps necessary to complete play activity
- Initiating/terminating activity
- Choosing, locating, and gathering appropriate supplies
- Attending to environment

Social Interaction Skills

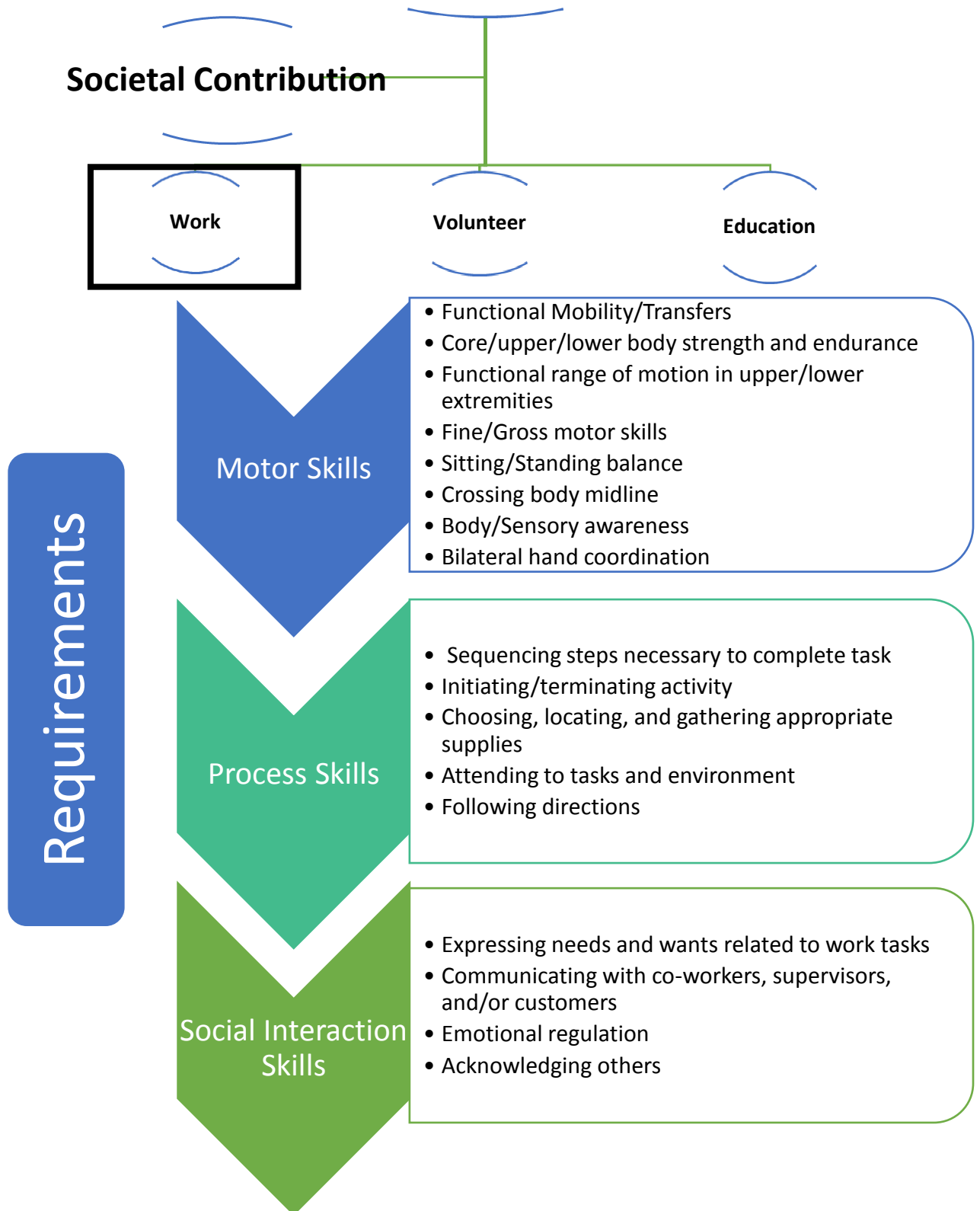
- Expressing needs and wants related to play activity
- Engaging in spontaneous conversation

Lifestyle Performance Model

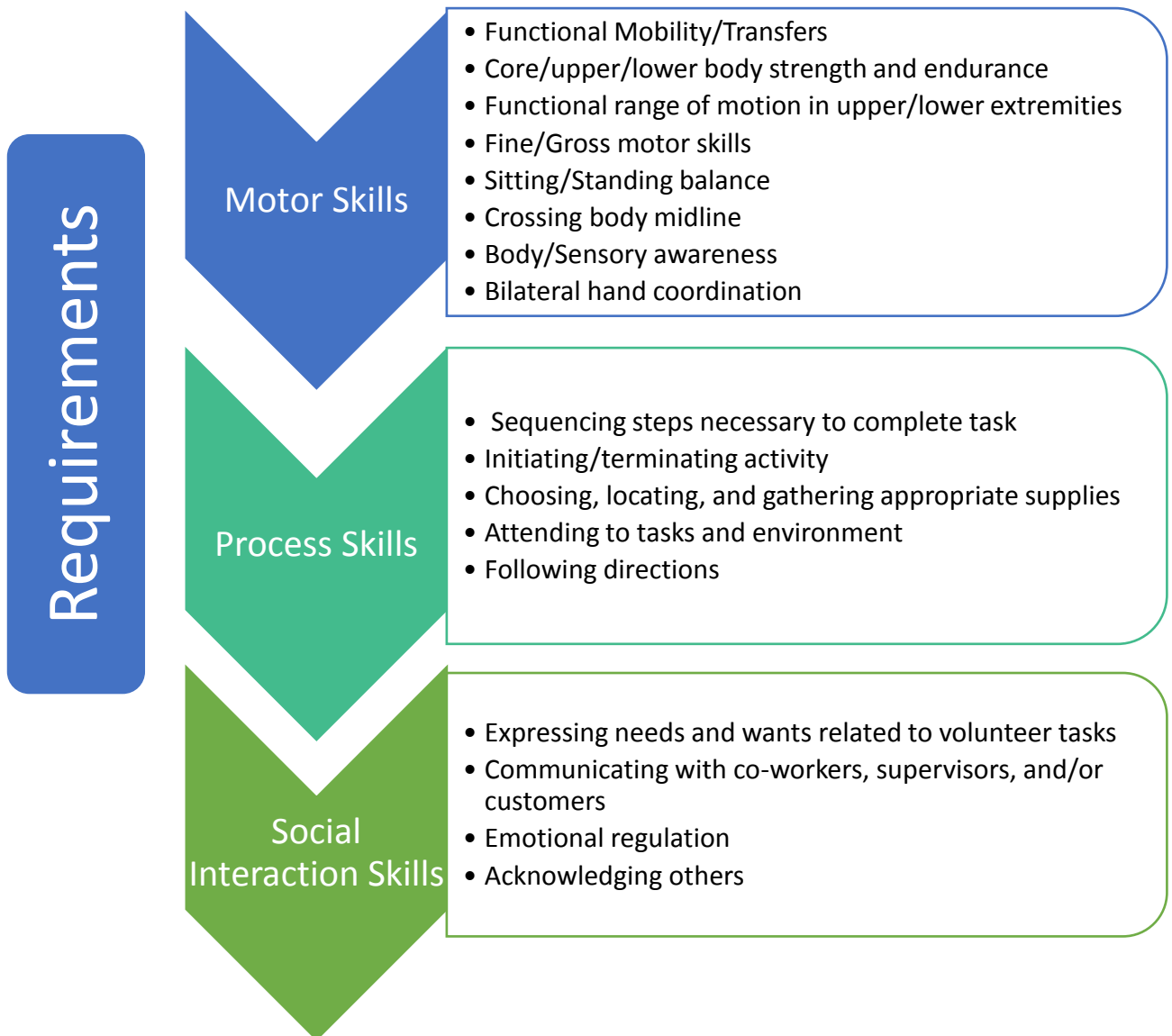
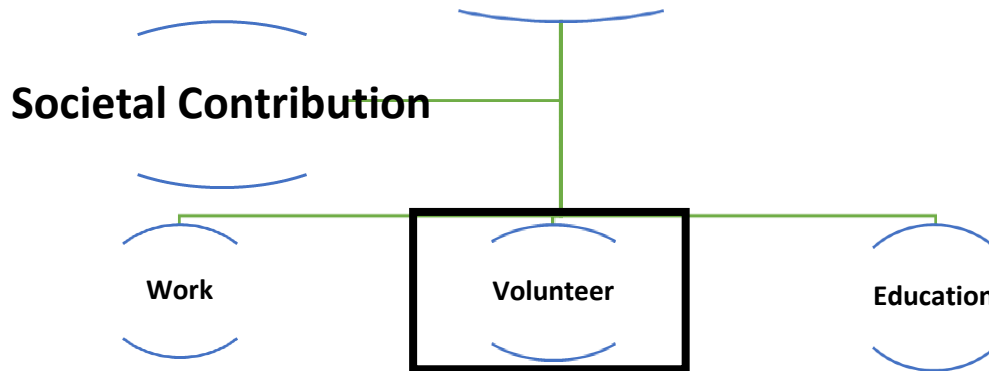


The domain *Societal Contribution* encompasses the activities that contribute the well-being of others by providing services to others (Velde & Fidler, 2002). These activities include the occupations of paid work, formal or informal education, and volunteer experiences. This domain is unique in that, a person must be able to recognize the needs and wants of others in addition to personal wants and needs to achieve satisfaction. Additionally, activities in this domain are not necessarily intrinsically gratifying as there are minimal expectations of mutual benefit (Velde & Fidler, 2002).

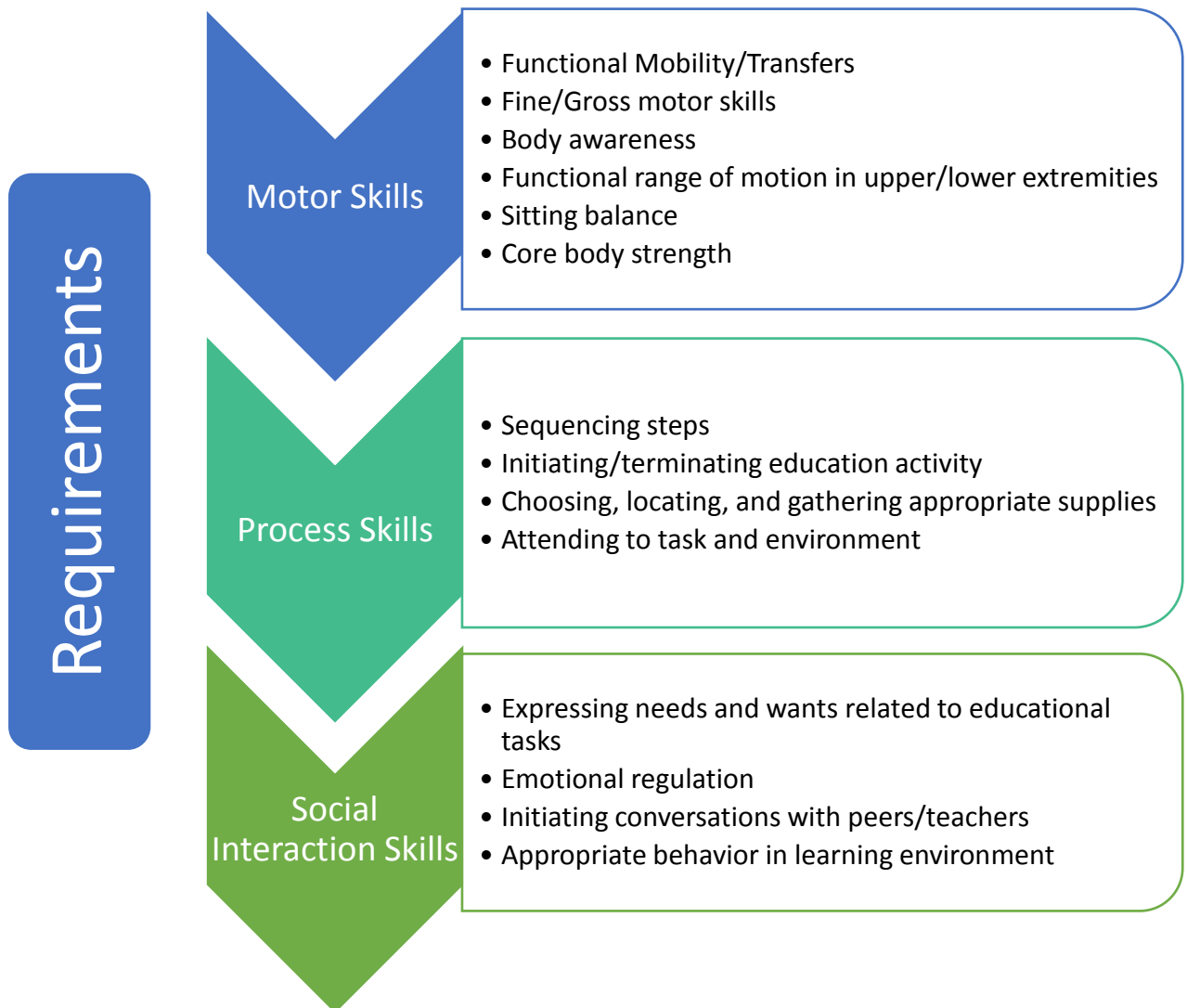
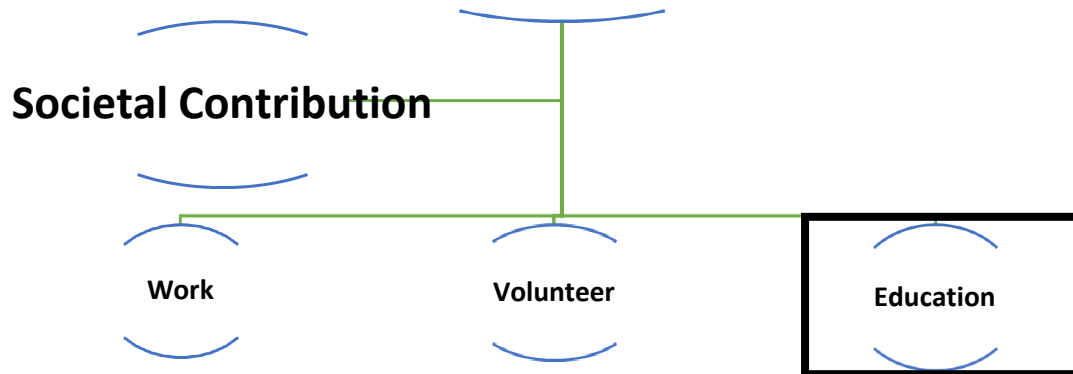
Lifestyle Performance Model



Lifestyle Performance Model



Lifestyle Performance Model



Lifestyle Performance Model

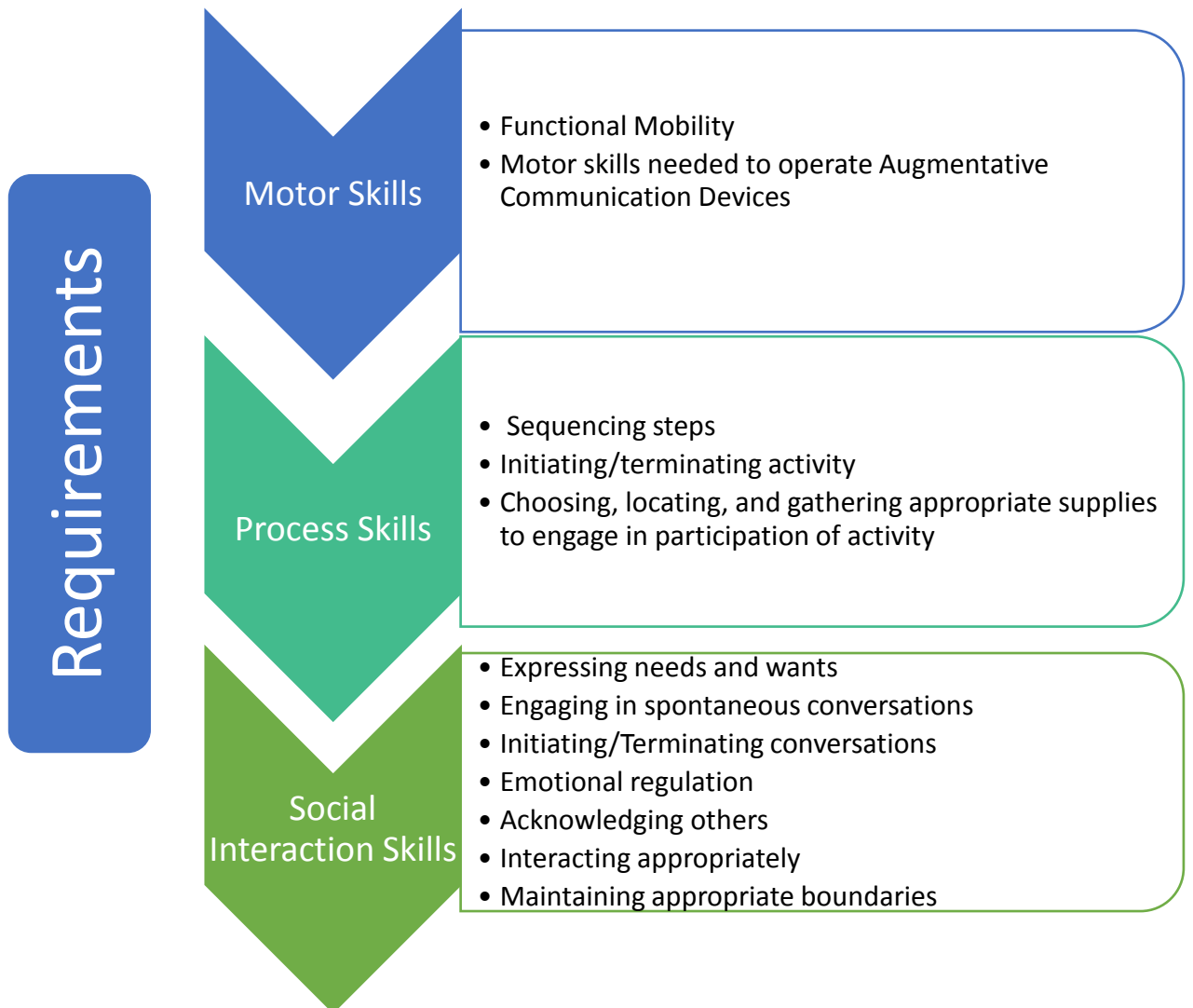


The *Reciprocal Interpersonal Relatedness* domain focuses on activities that are pursued to create and maintain relationships with others (Velde & Fidler, 2002). Activities in this domain are referred to as activities of strategy as the actions and outcomes are influenced and determined by the interactions between the individuals themselves. Activities can include writing letters, talking on the phone, or face to face conversations with family, friends, peers, or acquaintances. The domain emphasizes that it is the quality of the interactions rather than the quantity that maximizes satisfaction (Velde & Fidler, 2002). The occupation according to the OTPF included in this domain for the purpose of this product is social participation.

Lifestyle Performance Model

Reciprocal Interpersonal
Relatedness

Social Participation



Interventions Using Animal-Assisted Therapy



Motor Skills

Balance

Bilateral Hands

Crossing Midline

Core Strength

Fine Motor

Functional Grasp

Functional Mobility

Gross Motor

Range of Motion

Strength and Endurance

Balance Interventions

- Have the client stand and kick a ball back and forth with the dog
- Have the client brush/pet the dog while standing or sitting unsupported
- Have the client bathe the dog while standing or sitting unsupported
- Have the client walk the dog while client walks along "tight rope" taped on the floor
- Have the client shuffle step side to side while playing fetch with the dog
- Have the client take the dog through an obstacle course where the client has to weave in and out of objects
- Have the client walk "heel to toe" while taking the dog for a walk
- Have the client brush the dog while standing on an uneven surface/mat
- Have the client play fetch with the dog while performing "sit to stand" transfers when the ball is thrown
- Have the client draw a picture of the dog on whiteboard while standing

Bilateral Hand Interventions

- The client will catch a ball (tossed from therapist) and will then throw ball for the dog to retrieve
- Have the client use both hands to brush/pet the dog during grooming
- Have the client use both hands to scrub the dog with a sponge during bathing
- Have the client play tug of war with the dog
- Have the client bake dog treats while stirring batter with both hands
- Have the client roll batter into balls with both hands to make dog treats
- Have the client scoop dog food into dishes using both hands
- Have the client fill water and food dishes and carry to appropriate locations
- Have the client reach into toy bag with both hands to obtain toy to play with dog
- Have the client tie a bandana around dog
- Have the client give the dog praise by clapping hands together

Crossing Midline Interventions

- Place the dog on left side of the client who will then brush/pet the dog with their right hand
- Have the client give the dog a bath where bathing supplies are placed to the side of the client
- Hand the client a ball on the left side of body and have client reach for ball using right hand to play fetch with dog
- Have the client reach into toy bag positioned across body to obtain toy for the dog
- Have the client play tug of war with the dog positioned on either side of client
- Have the client scoop dog food placed on left side of body with right hand to fill food dish

Core Strength Interventions

- Have the client brush the dog in unsupported sitting at different height intervals
- Have the client play tug of war in unsupported sitting
- Have the client tap a lightweight ball to dog in unsupported sitting
- Have the client reach for a ball in all planes in unsupported sitting to play fetch with the dog
- Have the client play fetch with different weighted balls in unsupported sitting
- Have the client reach toward floor to fill water and food dishes
- Have the client sit unsupported while rolling a ball to the dog
- Have the client sit on a therapy ball while interacting with the dog

Fine Motor Interventions

- Have the client paint the dog's nails
- Have the client open containers associated with pet care
- Have the client gather treats from treat container
- Have the client fasten a leash to the dog's collar
- Have the client buckle the collar around the dog's neck
- Have the client blow bubbles for the dog to pop
- Have the client write a thank you card for handler and dog
- Have a deck of cards with dog commands written on each card. Have client choose cards from the deck and give a command to dog
- Have the client attach a harness to the dog
- Have the client spread peanut butter on treats to give to the dog
- Have the client make fleece toys for the dog by braiding strips of fabric together
- Have the client open and close animal carrier
- Have the client brush the dog's teeth

Functional Grasp

- Have the client hold and release the dog's brush
- Have the client use a spray bottle when bathing dog
- Have the client use a scissor to cut the dog's hair
- Have the client hold and release the dog's harness
- Have the client hold and squeeze shampoo bottle to bathe the dog
- Have the client hold and release supplies needed to fill the dog's water and food dishes
- Have the client maintain a grasp of toys when playing tug of war the dog
- Have the client hold and release different size toys/balls to play fetch with the dog
- Have the client grasp cleaning supplies to vacuum/sweep the dog's room
- Have the client fold the dog's towels/blankets
- Have the client grasp/squeeze toy to produce "squeak" prior to playing fetch with the dog

Functional Mobility Interventions

- Have client take dog for a walk indoors or outdoors
- Have client take dog through obstacle course
- Have dog assist client with transfers by being base of support rather than using adaptive equipment
- Have client propel wheelchair around dog as an obstacle
- Have client hide a toy in therapy room and have the dog find it
- Have the client use the dog as a base of support when climbing stairs
- Have client ambulate with dog at different inclines to master outdoor mobility
- Have client ambulate with dog during kitchen tasks
- Have client roll from side to side in bed to give dog a treat in order to master bed mobility

Gross Motor Interventions

- Have the client kick a ball for the dog to retrieve it
- Have the client engage in Yoga exercises with the dog
- Have the client dance with the dog
- Have the client take the dog for a walk indoors and outdoors over various types of surfaces
- Have the client create an obstacle course for the dog
- Have the client take the dog through an obstacle course
- Have the client play fetch with the dog using toys of different weights, shapes, and sizes
- Have the client bend at hips to complete grooming tasks for the dog
- Have the client bend at hips to fill the dog's food and water dishes
- Have the client shuffle step side to side while walking the dog
- Have the client walk on a "tight rope" taped to the floor while walking the dog
- Have the client march in place while playing fetch with the dog
- Have the client kick a ball for the dog to retrieve
- Have the client walk the dog up and down stairs

Range of Motion Interventions

- Have the client play fetch with the dog by throwing a ball
- Have the client brush the dog from head to toe
- Have the client give scrub the dog while giving a bath
- Have the client attach a harness to the dog
- Have the client reach in all planes to pet the dog
- Have the client give the dog a treat while reaching in all planes
- Have the client tap a lightweight ball in all planes for dog to retrieve
- Have the client reach for the dog's toy held in all planes by therapist in order to give it to the dog
- Have the client draw a picture of the dog on a whiteboard
- Have the client bake treats for the dog
- Have the client kick a ball for the dog to retrieve
- Have the client use the dog as base of support during all transfers
- Have the client take the dog for a walk indoors and outdoors

Strength and Endurance Interventions

- Have the client transfer the dog's food bags
- Have the client fill the dog's food dish by pouring weighted food bags
- Have the client play tug of war with the dog
- Have the client jog with the dog
- Have the client fill up the dog's bath by carrying buckets of water to a designated area
- Have the client toss different weighted balls for the dog to retrieve
- Have the client march in place while playing fetch with the dog
- Have the client take the dog for a walk indoors and outdoors
- Have the client do Yoga exercises with the dog
- Have the client wear ankle/wrist weights while interacting with the dog
- Have the client walk up and down stairs with the dog
- Have the client sit on a therapy ball while interacting with the dog

Additional Motor Interventions

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Process Skills

Attending

Choosing, locating, and gathering

Initiating/Terminating

Sequencing

Attending Interventions

- Have the client count the number of brush strokes while grooming the dog
- Have the client view the dog's toys in bag for a brief amount of time and have the client name as many toys from memory as they can
- Have the client discuss safety precautions of the dog
- Have the client engage in pet care and ensure all safety precautions have been addressed.
- Have the client complete tasks associated with the dog's care while therapist gradually introduces distractions
- Have the client follow written directions in order to complete all steps of pet care
- Have the client follow verbal directions in order to complete all steps of pet care
- Give the client a set of three commands and have the client repeat them to the dog in the same order given
- Have the client complete all assigned responsibilities of pet care at designated times
- Have the client follow recipes to make dog treats

Choosing, locating, and gathering supplies

Interventions

- Have the client select appropriate container to fill the dog's food or water
- Have the client select the appropriate food to fill the dog's dish
- Have the client locate, select, and gather all appropriate materials needed to bathe the dog
- Have the client select the appropriate brush to use for grooming the dog
- Have the client determine appropriate locations to complete all pet care
- Have the client determine appropriate locations to obtain the pet care supplies

Initiating and Terminating Interventions

- Have the client determine the need for pet care
- Have the client appropriately initiate and terminate steps needed to complete pet care
- Have the client determine appropriate times to initiate and terminate interactions with the dog

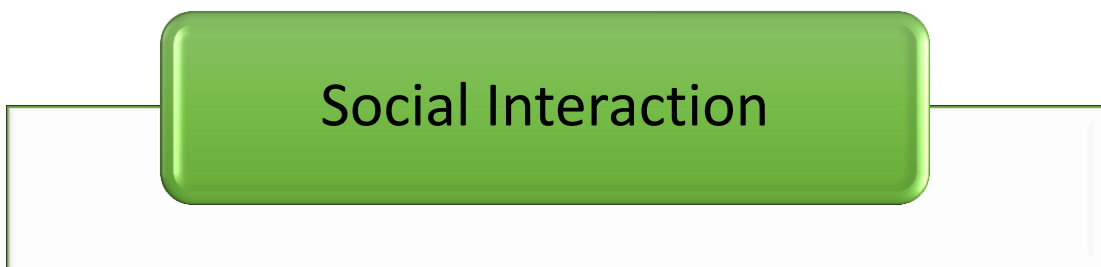
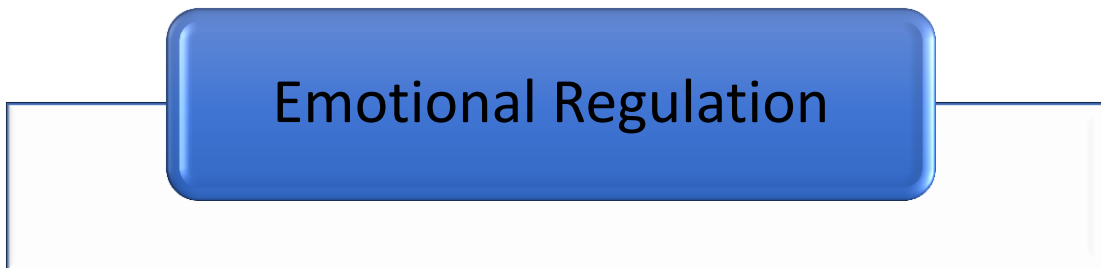
Sequencing Interventions

- Have the client bathe the dog following correct sequence of steps
- Have the client follow written recipe to make dog treats
- Have the client teach the dog a trick following appropriate steps (give command, praise, treat)
- Have the client sequence the steps of a social story related to pet care such as bathing
- Have the client successfully complete sequencing of steps needed to shop for dog's supplies

Additional Process Interventions

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Social Interaction Skills



Emotional Regulation Interventions

- Have the client take the dog to a busy location (such as a cafeteria) to practice regulating emotions
- While having the client provide care to the dog, the therapist will create a mistake on purpose to allow client to regulate emotions
- Have the client take the dog to a quiet area to practice appropriate behavior/emotions for that setting
- Discuss ways in which the dog calms self. Have client engage in activities that they have identified as self-calming
- Have the client identify the dog's emotions at different points during the therapy session to gain insight into different emotions
- Have the client verbalize emotions felt while interacting with the dog
- Have the client identify stressful/anxiety provoking situations for the dog to gain insight into personal triggers

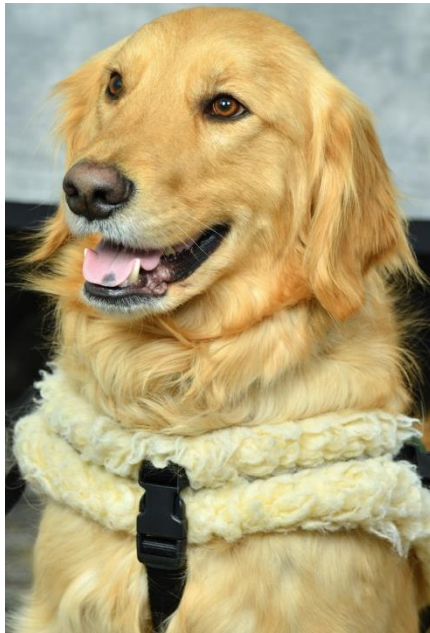
Social Interaction Interventions

- Have the client bathe the dog with a group of other clients
- Have the client discuss responsibilities of caring for dog in a group
- Have the client give the dog commands
- Have the client give the dog praise
- Remove some supplies needed to complete pet care and have the client express/request needed supplies
- Have the client teach another client how to give the dog a command/trick
- Have the client teach the dog a new trick
- Have client list reasons they enjoy using dogs in therapy
- Have the client introduce the dog to guests in lobby
- Have client verbalize how dog's needs are different from other animals

Additional Social Interaction Interventions

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Outcome Measure for Client Satisfaction



Patient Satisfaction Survey

Thank you in advance for completing this questionnaire.

Please rate your experience with animal-assisted therapy by filling in the circle (for example ●) as appropriate.

1. It was my first experience with animal-assisted therapy..... Yes No

2. Would you recommend the use of animal-assisted therapy to friends?..... Yes No

3. I found the use of animal-assisted therapy to be helpful in my therapy experience..... Yes No

4. I found the therapist working with me was knowledgeable in animal-assisted therapy techniques..... Yes No

5. I felt safe when working with the animals in therapy..... Yes No

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