

Improving quality of life for individuals with limb loss : a program development plan

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Improving Quality of Life for Individuals with Limb Loss: A Program Development Plan

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Note: This document describes a Capstone Dissemination project reflecting an individually planned experience conducted under faculty and site mentorship. The goal of the Capstone experience is to provide the occupational therapy doctoral student with a unique experience whereby he/she can demonstrate leadership and autonomous decision-making in preparation for enhanced future practice as an occupational therapist. As such, the Capstone Dissemination is not formal research.

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Executive Summary

The incidence of amputations is an increasing concern in the United States. In the United States, there are approximately 1.7 million individuals living with limb loss. Annually, health care costs for amputation total more than \$8.3 billion (Amputee Coalition of America, 2012). The major causes of amputations in the United States include complications with the vascular system, traumatic events, and congenital limb difference. The most common complication with the vascular system is diabetes (American Diabetes Association, 2011). In 2008, 10.1% of individuals living in Lucas County, Ohio had diabetes (Centers for Disease Control and Prevention, 2012).

Following amputation, individuals experience limitations that effect occupational performance. After an amputation, greater stresses are placed on the body and posture, balance, mobility, coordination, strength, and energy are altered. In order to regain independence in occupations, these skills need to be addressed. A physical conditioning and educational program implemented by occupational therapy practitioners is essential in order to facilitate independence, proficiency in daily occupations, and increased health-related quality of life.

The goal of the proposed program, which will be hosted by UTMC Outpatient Rehabilitation, in Toledo, Ohio, is to improve health-related quality of life for individuals with amputations. Health-related quality of life will be evaluated by a variety of assessments. The ten participants that will be recruited for the program will attend an hour-and-a-half session once a week for eight weeks. Each session will focus on a health and wellness topic related to amputations. The program will consist of educating the participants and completing hands-on occupations associated to the topic of the weekly session. A survey will be completed by the major stakeholders in order to evaluate programming.

Introduction

The proposed program is called Improving Quality of Life for Individuals with Limb Loss. The goal of the program at UTMC Outpatient Rehabilitation is to enhance health-related quality of life for individuals with amputations.

The site and sponsoring agency of the program is The University of Toledo Medical Center Outpatient Rehabilitation located in Toledo, Ohio. The University of Toledo Medical Center Outpatient Rehabilitation is dedicated to:

- “provide the people of this region with rehabilitative services, in the most appropriate setting and in an efficient and effective manner, to promote maximum levels of functioning independence as well as optimal psychological and social adjustment to disabling conditions, with the goal of optimizing their integration into the community,
- foster and support the education of health professionals at all levels and the community as a whole in matters pertinent to rehabilitation,
- to conduct research and participate in prevention efforts designed to improve rehabilitation outcomes and to reduce the disabling and handicapping effects of impairments and disease.”

An organizational chart of UTMC is provided in Appendix A. The occupational therapy practitioner who will direct the program will be supervised by the director of outpatient rehabilitation at UTMC. The occupational therapy practitioner will be supervised by the director of outpatient rehabilitation because this individual manages all outpatient therapies at UTMC. The occupational therapy practitioner will also report to certified prosthetists and orthotists if a concern with a prosthetic device arises during the health and wellness program. It is essential for

open communication and contact with certified prosthetists and orthotists because the occupational therapy practitioner is not an expert in the area of prosthetic.

Review of Literature

In the United States, there are approximately 1.7 million individuals living with limb loss. Furthermore, it is estimated that one out of every 200 people in the United States has had an amputation (National Limb Loss Information Center, 2008). Approximately 75% of upper and lower extremity amputations occur in individuals over the age of 65 years. However, the peak age for individuals to sustain an amputation is between 41 and 70 years of age (Catastrophic Injury Resource Center, 2011). Males are more likely to be effected by an amputation than females (Catastrophic Injury Resource Center, 2011).

Annually, health care costs for amputations total more than \$8.3 billion. Furthermore, diabetes related amputations cost nearly \$2 billion. Studies have indicated that the lifetime health care cost for individuals with amputation are more than \$500,000 per person (Amputee Coalition of America, 2012).

The major causes of amputations in the United States include complications with the vascular system, traumatic events, and congenital limb difference. Approximately 82% of amputations are a result of vascular conditions and 97% of vascular amputations involve the lower limb (National Limb Loss Information Center, 2008). The National Limb Loss Information Center (2008) indicates that “the risk of dysvascular amputation was highest among males and individuals who were African American.”

The most common complication with the vascular system is diabetes (American Diabetes Association, 2011). Diabetes is a condition in which blood glucose levels are above the normal range (Centers for Disease Control and Prevention, 2012). In the United States there are 25.8

million or 8.3% individuals that have diabetes (American Diabetes Association, 2011). Of the 25.8 million individuals with diabetes, 12.6 million individuals are women (Centers for Disease Control and Prevention, 2012). Furthermore, there were 1.9 million new cases of diabetes that were diagnosed in individuals 20 years and older in 2010 (American Diabetes Association, 2011). In 2008, 10.1% of adult individuals residing in Lucas County, Ohio were diagnosed with diabetes (Centers for Disease Control and Prevention, 2012). It is estimated that 33% of Americans will have diabetes by 2050 (American Coalition of America, 2012). There are several racial and ethnic groups that are more commonly affected by diabetes. These groups include African Americans, Hispanic/Latino Americans, American Indians, Asian Americans, and Pacific Islander Americans (Centers for Disease Control and Prevention, 2012).

There are many complications due to diabetes. These complications include: heart disease and stroke, high blood pressure, blindness, kidney disease, nervous system disease, and amputation (American Diabetes Association, 2011). In 2008, 82% of amputations were due to complications related to some type of vascular disease (National Limb Loss Information Center, 2008). Furthermore, in 2005 to 2007, 3.5 lower extremity amputations occurred for every 1,000 individuals diagnosed with diabetes (Healthy People 2020, 2011). There is a 55% increase in mortality of individuals living with diabetes and a lower limb amputation (Amputee Coalition of American, 2012). Finally, it is estimated that approximately 60% of amputations resulting from diabetes could have been prevented with modifications in activity level, diet, and hygiene (Amputee Coalition of America, 2012).

Although the majority of amputations occur as a result of complications to the vascular system, 22% of amputations are due to a traumatic event (Catastrophic Injury Resource Center, 2011). Traumatic amputations are the accidental severing of a portion or all of a limb. A

traumatic amputation is a significant life-threatening and life-altering event. Of the 22% of traumatic amputations, 68.6% of these amputations occur to the upper limb. Males are at much greater risk than females to acquire a traumatic limb amputation (Catastrophic Resource Center, 2011). Although traumatic amputations are decreasing, amputations due to diabetes are on the rise. It is evident from these statistics that amputations are a major public health problem, in the United States, due to diabetes and traumatic events.

Finally, congenital limb difference occurs when a child is born without one or more limbs (Catastrophic Injury Resource Center, 2011). Congenital limb difference occurs in approximately 26 newborns per 100,000 live births (National Limb Loss Information Center, 2008). Of the 26 newborns per 100,000 live births, 58.5% are upper-limb differences (National Limb Loss Information Center, 2008). The incidence of congenital limb difference has been relatively stable over the past 30 years.

Although not all amputations are preventable, complications from diabetes and peripheral vascular disease, the leading cause of amputations, can often be prevented through education, disease management, foot screening, and increasing health-related quality of life (Amputee Coalition of American, 2012). As a result of the vast majority of amputations occurring due to vascular complications, it is important to understand steps that can be taken in order to promote healthy living in individuals with amputations. Furthermore, healthy living is also important for individuals who have acquired an amputation due to trauma and congenital limb difference. The Centers for Disease Control and Prevention (2012) indicates that individuals with disabilities are more likely than individuals without disabilities to report poorer overall health, less access to adequate healthcare, smoking, and physical inactivity. In 2008, there were approximately 26.8% adults residing in Lucas County who were physically inactive (Centers for Disease Control and

Prevention, 2012). Research indicates that physical activity is an essential aspect of controlling diabetes and thus limiting disability by amputations. As a result, the Centers for Disease Control and Prevention (2012) states that individuals with disabilities need healthcare and health programs to stay well, active, increase health-related quality of life, and in order to have an opportunity to participate in the community.

It is recommended that individuals with diabetes complete physical activity at a moderate intensity for at least 30 minutes on five or more days per week. Moderate intensity exercise includes walking briskly, swimming, or bicycling. Strength training exercise with hand weights, elastic bands, and machines are useful for building muscle and is essential aspect of physical activity. Furthermore, stretching assists with improving flexibility and preventing soreness after exercise (Centers for Disease Control and Prevention, 2012). Although exercise provides many benefits for individuals with amputations, safety concerns are important to consider before and after exercising. For example, using heavy weight during exercise can increase blood pressure concerns. Physical activity has the potential to lower blood glucose levels too much. Therefore, individuals with diabetes should be concerned with low blood glucose levels or hypoglycemia. While completing physical activity, hypoglycemia results in being shaky, weak, confused, irritable, anxious, hungry, tired, or sweaty. Individuals can also have a headache and lose consciousness. In order to prevent hypoglycemia during exercise, blood glucose levels should be checked before and after exercise (Centers for Disease Control and Prevention, 2012).

In addition to physical activity limiting diabetes, weight gain, and future amputations physical activity also has many other benefits for individuals with amputations. Following amputation, individuals experience altered neuromuscular and movement-related function that affects occupational performance. Occupational performance is affected not only in the area

near the amputation but also in other parts of the body. For example, greater stresses are placed on the body and the unaffected extremities will experience increased weight bearing during many occupations (Kennan & Glover, 2006). Furthermore, following an amputation to an extremity, posture, balance, mobility, coordination, strength, and energy are also altered. In order to regain independence in occupations, it is important for all of these skills to be addressed. A physical conditioning program can be implemented in order to maintain and increased range of motion of the residual limb and all joints proximal to the amputation. When an amputation occurs, individuals will experience a shift in weight and center of gravity. As a result, core strengthening will promote postural control, balance, endurance, and symmetry. Finally, limb movement increases circulation and reduces edema following an amputation (Stubblefield & Armstrong, 2008). It is essential that occupational therapy practitioners help improve occupational performance, facilitate independence, and encourage proficiency in occupations (Kennan & Glover, 2006).

Donachy et al. (2004) conducted a case study in order to determine the effects of a strength and endurance training program for an individual living with an amputation. The subject that was assessed in this study was a 40-year-old male who had sustained a left shoulder disarticulation and a left transtibial amputation 21 years prior to the study. The subject received a lower limb prosthetic device, but he did not receive an upper limb prosthetic device. Prior to the study, the subject was attempting to engage in physical activity without professional guidance at a fitness center. The subject encountered obstacles when using equipment at the fitness center, and he was unable to improve cardiovascular fitness. The subject's height, weight, blood pressure, and heart rate were calculated before conducting the study. Furthermore, the subject underwent fitness and strength tests in order to obtain baseline measures. After initial

testing, the subject completed training sessions three times per week for 2 months. Training sessions consisted of a strength-training circuit, cycling, and exercise for core stability. The results of the study indicate that the subject increased from baseline in the timed sit-up test and left single leg press as measured by the fitness and strength tests. The subject also achieved strength gains in the weight training circuit and had increased oxygen consumption which was also measured during the baseline fitness and strength tests. The authors concluded that active participation in physically challenging activities is necessary for individuals living with amputations to achieve. Additionally, the study more and more individuals living with amputations would like to participate in physical activity despite their physical limitations. This case study recommends becoming aware of the specific needs of individuals with amputations. The case study depicts the difficulty individuals living with amputations encounter when engaging in physical activity in community fitness centers.

In addition to physical activity, healthy eating is also important in order to limit amputations and maintain proper fit of prosthetic devices. It is important to maintain a healthy body weight in order to decrease the risk of developing chronic conditions (Kuczmarski, Reitz, & Pizzi, 2010). Additionally, maintaining a healthy body weight will ensure individuals will have the opportunity to participate in occupations without limitations. As a result, occupational therapy practitioners have the duty to educate individuals about maintaining a healthy body weight in order for a maximum level of occupational performance (Kuczmarski, Reitz, & Pizzi, 2010). Factors that need to be taken into consideration when eating healthy include limiting foods with high saturated fats, trans fats, sugar, and salt, while eating fruits, vegetables, and other foods high in whole grains (Centers for Disease Control and Prevention, 2012). In order to assist individuals in making proper food choices, meal planning techniques can be implemented into

the daily routine. Education related to meal planning is also an important factor for individuals living with amputations.

A study was conducted by Eneroth, Apwelqzist, Larsson, and Persson (1997) in order to determine if individuals receiving supplementary nutrition would improve wound healing and decrease mortality after undergoing amputations. Thirty-eight patients living with amputations due to arterial disease were selected and given the nutritional assessment. The nutritional assessment was used to determine the baseline nutritional level of each subject. The control group consisted of 32 individuals living with major amputations. These individuals were matched to the experimental group based on disease, gender, age, smoking habit, previous vascular surgery, and living conditions before the amputation. The experimental group was given an average of 2,098 kcal/day of supplementary nutrition for a total of 11 days postoperative. Twenty-four patients received at least five days of postoperative supplemental nutrition because immediate amputation surgery did not occur. The results of the study indicate that at six month follow-up, 26 subjects in the experimental group had health stumps whereas 12 subjects in the control group had healed residual limbs. These results are statistically significant. At the six month follow-up, nine subjects in the experimental group died. However, 14 subjects in the control group died at the 6 month follow-up. There is no significant difference in the mortality between groups. These results suggest that nutrition has a significant role in wound healing. Furthermore, the results indicate that nutrition also has a significant role in health-related quality of life for individuals with amputations. A limitation of this study is that the subjects were not randomized. It is necessary that individuals living with amputations maintain a healthy weight based on their body make-up and consume a diet with the proper nutrition. As a

result, implementing diet modification and nutritional strategies into a program for individuals living with amputations is a necessity in order to improve health-related quality of life.

Overweight is a surplus of body weight that is a combination of muscle, bone, fat, and water whereas obesity is an excess amount of body fat (Sheehan, 2005). Although a certain amount of body fat is needed in order to maintain a healthy life style, excess fat has the potential to be detrimental to overall health-related quality of life. For individuals living with amputations, it is important to maintain a healthy body weight in order to wear a properly fitted prosthetic device. An ill-fitting prosthetic device may cause skin breakdown, pain, an abnormal gait pattern, and may place stress on other parts of the body (Sheehan, 2005). Following limb loss, it may be difficult to maintain a healthy body weight due to decreased participation in occupations. As a result, individuals living with amputations need to be educated about diet modification and participation in occupations that are physical in nature.

Although physical activity and maintaining a healthy diet are essential factors for individuals living with amputations that are related to vascular complications, trauma, and congenital limb difference, it is also important to implement other factors into program to improve health-related quality of life for individuals living with amputations. For example, teaching individuals with amputations energy conservation techniques is vital because these individuals expend a significant amount of energy while conducting daily occupations.

Waters, Perry, Antonelli, and Hislop (1976) conducted a study in order to determine the energy cost during functional mobility of individuals with different levels of amputations compared to individuals who did not have amputations. Forty unmatched males and females without amputations were used as the control group for the study. Seventy individuals living with amputations who met the criteria of the study were included in the experimental group.

Each subject completed functional mobility for 60.5 meters while heart rate, respiratory rate, and cadence were measured by the research teams. The subjects were asked to complete this functional mobility distance twice. The first time the test was completed, the subjects were asked to complete functional mobility at their own pace. The second time the test was completed, the subjects were asked to complete functional mobility as fast as possible. The results indicate that the average speed of the control group was 82 meters per minute. The results did not vary with age. A higher amputation level resulted in the average speed decreasing during the functional mobility distance test. Furthermore, the results indicate that the individuals living with an amputation had a slower cadence and reduced stride length than that of the control group. The results also indicate that maximum aerobic capacity was influenced by level of amputation. The researchers concluded that individuals with amputations had a higher rate of oxygen uptake per minute compared to that of the control group. The energy cost for functional mobility at a desired pace for individuals with vascular amputations was high. In addition to increased energy costs, individuals living with vascular above-the-knee amputations also experienced a significant difference in elevated heart rate when compared to the control group. Furthermore, individuals with vascular above-the-knee amputations had a significantly greater respiratory quotient than the control group. As a result of the increased energy costs, an elevated heart rate, and increased respiratory quotient, energy conservation techniques should be considered in a program to improve health-related quality of life for individuals living with amputations. Energy conservation techniques will allow individuals to maintain and enhance health-related quality of life by ensuring they are able to adequately participate in daily occupations.

In addition to physical activity, diet modification, and energy conservation techniques, proper education about phantom limb pain is also necessary to include in a program for individuals living with amputations. Phantom pain is a painful sensation that occurs in the absent limb and can be very disturbing to individuals (Nikolajsen & Jensen, 2001). Sixty to eighty percent of individuals living with amputations experience phantom limb pain. Seventy-five percent of individuals that experience phantom limb pain have an onset within the first few days after an amputation (Nikolajsen & Jensen, 2001). Although the length and duration of phantom limb pain varies among individuals, the incidence of phantom limb pain seems to be dependent on age, gender, and level of amputation. Residual pain is also a concern for individuals following amputation. Residual limb pain is localized in the limb following amputation (Nikolajsen & Jensen, 2001).

Bosmans, Geertzen, Post, van der Schans, and Dijkstra (2010) conducted a study to analyze the prevalence of phantom limb pain over time and to analyze factors associated with phantom limb pain. One hundred thirty-four individuals participated in this longitudinal study. One hundred twenty of the subjects who participated in the study had a lower limb amputation. After meeting inclusion criteria, the subjects were asked to fill out a questionnaire prior to the amputation or within five day after the amputation. Eighty-five of the subjects were analyzed. The subjects agreed to complete questionnaires at six months post-op, one-and-a-half years post-op, two-and-a-half years post-op, and three-and-a-half years post-op. The subjects were asked to fill out the questionnaire regardless if they had a phantom limb pain or not. The results indicate that individuals living with lower limb amputations experienced phantom limb pain most frequently six months after surgery. On the other hand, individuals with upper limb amputations experienced of phantom limb pain most frequently one-and-a-half years after amputation.

Overall, women experienced phantom limb pain more frequently than males. The authors concluded that individuals who were less likely to experience phantom limb pain were males and individuals living with lower extremity amputations. Furthermore, experiencing phantom limb pain decreased over time. Although the occurrence of phantom pain varies among individuals living with amputations, phantom limb pain has the potential to limit occupational performance and decrease health-related quality of life.

Chan et al. (2007) conducted a randomized, sham controlled trial of mirror therapy versus imagery therapy involving patients with phantom pain after an amputation of the lower limb.. Subjects were randomly assigned to one of three groups. The first group viewed a reflected image of their intact limb, the second group viewed a covered mirror, and the third group used mental visualization. The subjects performed their assigned therapy 15 minutes per day. The number and duration of participants' phantom limb pain episodes and intensity of the phantom limb pain were recorded. Phantom limb pain decreased in all participants that completed mirror therapy whereas one participant in the covered mirror group experienced decreased pain. Finally, two participants in the mental visualization group reported decreased phantom limb pain. The findings of the study indicate that mirror therapy may reduce phantom limb pain in patients who have undergone amputation of lower limbs.

Implementing educational strategies into a program for individuals living with amputations is essential in order to help individuals living with amputations complete daily occupations to the fullest of their abilities. It is important to educate all individuals living with amputations about phantom limb pain even if the individuals are not currently experiencing phantom limb pain. Education regarding phantom limb pain will allow individuals to cope with the phantom limb pain no matter when individuals living with amputations experience this pain.

The epidemiological studies cited above, provide evidence that amputations are a concern in the United States. Following amputations, whether the amputation is due to a vascular complication, traumatic event, or congenital limb difference, many individuals experience decreased health-related quality of life. Therefore, it is necessary to take the steps in order to ensure individuals living with amputations are able to maintain a high health-related quality of life. A program designed to improve health-related quality of life for individuals living with amputations will ensure that individuals receive the necessary education to establish a high occupational performance, prevent future amputations, and increase health-related quality of life.

Federal Initiative

The goal of Healthy People 2020 is to “help individuals of all ages increase life expectancy and improve their quality of life” (Healthy People 2020, 2011). By implementing the program to improve quality of life for individuals with limb loss at UTMC Outpatient Rehabilitation, several objectives from the governmental initiative Healthy People 2020 will be addressed. Through physical activity and diet modification, the program meets objective D—4 in Healthy People 2020. The objective D—4 states to “reduce the rate of lower extremity amputations in persons diagnosed with diabetes” (Healthy People 2020, 2011). The program to improve quality of life for individuals with limb loss will make the participants more aware of the importance of diet modification, physical activity, and hygiene concerns related to diabetes. By educating participants about these factors, objective D—4 of Healthy People 2020 will help to prevent additional amputations. The second objective that will be met in the program is objective PA—2. Objective PA—2 advocates for an increase in the “proportion of adults who meet current Federal physical activity guidelines for aerobic physical activity and for muscle-strengthening activity” (Healthy People 2020, 2011). The program will provide participants with

physical activity and muscle strengthening techniques which the participants will be able to complete following program involvement. Objective NWS—8 states to “increase the proportion of adults who are at a healthy weight,” and objective NWS—9 states to “reduce the proportion of adults who are obese.” These objectives will also be addressed in the program to improve the quality of life of individuals with limb loss (Healthy People 2020, 2011). The program will incorporate diet modification and exercise techniques that will meet the objectives stated in Healthy People 2020. Diet modification will also be related to the objectives NWS—14, NWS—15, NWS—16, NWS—17, NWS—18, NWS—19, and NWS—20 which are related to increasing consumption of fruits, vegetables, whole grains, and calcium while reducing the consumption of sodium and calories from solid fats, added sugars, and saturated fats (Healthy People 2020, 2011).

The World Health Organization (2013) indicates that a healthy diet, frequent physical activity, maintaining a normal body weight, and avoiding tobacco can prevent or delay the onset of type 2 diabetes. Diabetes and the complications related to diabetes such as amputations have a significant impact on individuals, families, health systems, and countries. By 2015, the World Health Organization (WHO) estimates that China will lose \$558 billion national income as a result of heart disease, stroke and diabetes (World Health Organization, 2011). The burden of diabetes on individuals, families, health systems, and countries can be reduced by achieving and maintaining a healthy body weight, participating in regular physical activity, maintaining a healthy diet with fruits, vegetables, and whole grains, and avoiding tobacco use. In order to prevent and control diabetes and related complications, the WHO is focusing on population-wide approaches to promote healthy diet and regular physical activity. These approaches include providing scientific guidelines for diabetes prevention, developing norms and standards for

diabetes care, building partnerships with the International Diabetes Federation to build awareness of the global diabetes epidemic, and conducting surveillance of diabetes and its risk factors.

Physical activity, as defined by the World Health Organization (2013), is “any bodily movement produced by skeletal muscles that requires energy expenditure.” In 2004, approximately 30% of adults in the United States participated in the recommended levels of physical activity (Reitz, 2010). The World Health Organization (2013) has recognized physical inactivity as the fourth leading risk factor for global mortality. Furthermore, it is estimated that physical inactivity causes 3.2 million deaths annually across the globe (World Health Organization, 2013).

Physical activity participation rates differ in individuals with and without disabilities. It is evident that individuals with disabilities have lower rates of physical activity participation due to physical and mental limitations, lack of transportation, and barriers in recreation environments (Reitz, 2010). As a result of these statistics, the WHO has developed the “Global Recommendations on Physical Activity for Health” in order to provide guidance on the frequency, duration, intensity, and type of physical activity to maintain a healthy lifestyle. These recommendations state that individuals aged 18 years and over should complete at least 150 minutes of moderate-intensity aerobic physical activity or 75 minutes of vigorous-intensity physical activity throughout the week. In addition to aerobic activity, muscle strengthening should be completed two or more days per week (World Health Organization, 2013). Although the above recommendations are set by the WHO, it is also stated that individuals “should be as physically active as their abilities and conditions allow” (World Health Organization, 2013). Adults that are physically active have lower rates of mortality, high blood pressure, type 2 diabetes, and a healthier body mass and composition. Furthermore, physically active older adults

have high levels of functional health, a decreased fall rate, increased cognitive functioning, and decreased functional limitations (World Health Organization, 2013).

Contact with Stakeholders

The first necessary form of data collection was the semi-structured interview with key informants, Jeff McAnall, Rehabilitation Director at UTMC Outpatient Rehabilitation, Mary Breymaier, Physical Therapist, and Ashley Bilek, Physical Therapy Assistant. Each interview was performed individually. The interviews began with introductions, an explanation of the purpose of the interview, and an explanation of occupational therapy. The interviews continued with questions about UTMC Outpatient Rehabilitation, the demographics of the clinic, information about the patients of UTMC Outpatient Rehabilitation, and the programming needs of UTMC Outpatient Rehabilitation. Mr. McAnall was consulted during the semi-structured interview, which can be found in Appendix B, regarding programming needs and the barriers to implementing a program at UTMC Outpatient Rehabilitation. The semi-structured interview provided a great deal of pertinent information in order to begin learning about the needs of patients of UTMC Outpatient Rehabilitation. The interviews conducted with Ms. Breymaier and Ms. Bilek can be found in Appendix C. These interviews were conducted in order to receive a different perspective of the needs of the patients than that provided by Mr. McAnall. As a result of gaining information from the semi-structured interview with Mr. McAnall, the interviews with Ms. Breymaier and Bilek were more focused and contained fewer open-ended questions (Fazio, 2008). By using more straightforward questions in the interview with Ms. Breymaier and Bilek, the specific needs of the patients were targeted. The interviews with Ms. Breymaier and Ms. Bilek consisted of questions related to patient concerns and barriers, unmet programming needs, and patients' willingness to participate in programming at UTMC. The interviews also consisted

of questions related to community resources and relevant literature about health, wellness, and individuals with amputations. The semi-structured interview validated previous thoughts about the individuals living with amputations and also provided direction for future research. The semi-structured interview was a great tool to gain insight to the needs of the patients at UTMC Outpatient Rehabilitation (Fazio, 2008).

As a result of the needs found by Mr. McAnall, Ms. Breymaier, and Ms. Bilek, a survey was also provided to potential participants of the program. A survey is a measurement tool that provides statistics by asking individuals questions (Fowler, 1993). A survey was a necessary tool to determine the patients' needs for a program. A survey is a better option than other data collection methods because of time and transportation limitations. The participants surveyed were patients from Prosthetic Clinic from the Physical Medicine and Rehabilitation office at UTMC and Physical Therapy patients at UTMC Outpatient Rehabilitation. The survey was distributed to patients either during Prosthetic Clinic or during a physical therapy session. The purpose of the survey was explained prior to distributing the survey to the patients. The patients were asked to complete the survey prior to leaving their appointment at UTMC. The survey consisted of open-ended questions related to occupations of daily living, leisure occupations, roles, and difficulties faced daily due to living with an amputation. Furthermore, patients were questioned about their major concerns and barriers of living with amputations. Finally, patients were asked if they would be willing to participate in a program at UTMC Outpatient Rehabilitation and what days and times would be best for their schedule. Due to confidentiality concerns, the survey was anonymous. These questions will help guide program development in order to best fit the needs of individuals with amputations at UTMC Outpatient Rehabilitation. A copy of the complete survey can be found in Appendix D.

In addition to interviewing Mr. McAnall, Ms. Breymaier, and Ms. Bilek and surveying potential participants, observation of potential participants of the program occurred. Observation of Ms. Breymaier, Ms. Bilek, and other physical therapists and occupational therapists interacting with individuals with amputations at UTMC Outpatient Rehabilitation occurred. It was appropriate to complete observation of these individuals because the observation opportunities provided information related to occupational performance and individual life experiences (Bonder & Bello-Hass, 2009). Observation of individuals with amputations during appointments at UTMC Outpatient Rehabilitation provided information regarding fit of prosthetic devices, general patient concerns, phantom limb pain, completing physical, diet modification, and skin concerns. Furthermore, observation at UTMC Outpatient Rehabilitation provided evidence of how patient concerns are taken into consideration and the appropriate techniques of interacting with the patients. Observation is a learning tool that allows important evidence to be gained from a variety of individuals.

The occupational needs of the potential participants were assessed throughout this plan. The survey assessed occupations of daily living and instrumental occupations of daily living. Furthermore, the survey assessed the barriers and concerns of individuals living with amputations. By assessing the needs of the potential participants through the semi-structured interview, observation of potential participants, and the survey, the occupational needs of the potential participants were addressed.

Assessing Cultural Factors

There are several cultural factors that were taken into consideration when completing the needs assessment. First, during the introductions of the interviews, the interviewees were asked what they would prefer to be called throughout the interview and observation process. All

interviewees preferred to be called by their first name. Furthermore, the interviews took place in an environment that was chosen by the interviewees. By choosing the location to complete the interviews, it was evident from the casual conversation that the interviewees were comfortable in the environment.

In addition to cultural factors being considered through the interview process, cultural factors were also considered in the survey. The survey has fairly easy readability that allows questions to be understood by individuals from a variety of reading levels (Calderon, Morales, Liu, and Hays, 2006). Patients of UTMC Physical Medicine and Rehabilitation and UTMC Outpatient Rehabilitation were asked to complete the survey at the facility. The patient completed the survey either in the examining room or in the therapy gym, depending on their preference. The open-ended questions were used throughout the survey in order to not make assumptions about the patient's needs. Therefore, a program can be focused on the needs that were present from the responses to the survey questions. Finally, since the survey is anonymous, the patients did not have to worry that their personal health, barriers, and difficulties were displayed or scrutinized.

Prioritizing Needs

As a result of the needs found from semi-structured interviews, surveys distributed to potential program participants, and observation opportunities, the needs of the program were prioritized for UTMC Outpatient Rehabilitation. After the needs of the potential participants were established, the needs were prioritized based on my expertise in the specified areas identified by the survey. Furthermore, the needs were also prioritized based on an occupational-based approach. All sessions of the program will be occupation-based. The participants will be able to use the skills from the program to complete the occupations within their daily routine.

The occupation-based sessions will allow the participants to accomplish their goals and achieve a higher health-related quality of life. Finally, the needs will also be prioritized based on the accommodations of the facility and the practicality of implementing the needs at the facility.

The needs of the program include:

- energy conservation techniques,
- physical activity,
- driving,
- residual limb hygiene,
- phantom limb pain,
- skin desensitization,
- diet modification,
- participation in leisure occupations (i.e. sports, gardening, household management).

It is essential to address each of these topics in a program to improve health-related quality of life for individuals living with amputations. By addressing these topics in a program to improve health-related quality of life, individuals living with amputations will have greater ability to maintain and regain independence in daily occupations. Furthermore, each of these topics will be explored in a hands-on fashion in order to ensure that the participants received adequate understanding of the topics. In addition to receiving an understanding of the topics, hands-on experiences will also ensure that the participants will be able to increase their occupational performance in these areas. The program to improve quality of life for individuals with limb loss will reduce further illness, disease, and injuries while reducing health disparities, promoting healthy living practices among individuals living with amputations, and providing

skill development training for daily occupations (American Occupational Therapy Association, 2008).

Occupational therapy practitioners have the expertise to help individuals with amputations overcome physical and emotional limitations associated with amputations. By assisting individuals living with amputations in overcoming these barriers, individuals will have greater success in independently completing daily occupations (American Occupational Therapy Association, 2011). Furthermore, by promoting health and wellness for individuals with amputations, occupational therapy practitioners are ensuring individuals have the opportunity to maintain satisfying relationships, work, play, and leisure experiences (American Occupational Therapy Association, 2008).

Role of Occupational Therapy

Occupational therapy has been promoting health and wellness since the birth of the profession. Dunton (1954) believed that physical activity as well as music and games were essential occupations in order to enhance health and wellbeing. The profession of occupational therapy has evolved and has three critical roles in health and wellness. Occupational therapy practitioners “promote healthy lifestyles, emphasize occupation as an essential element of health promotion strategies, and provide interventions to individuals and populations” with physical, mental, and cognitive impairments (American Occupational Therapy Association, 2008). Through health promotion interventions, occupational therapy assists individuals with disabilities to decrease health disparities.

In 2003, the American Occupational Therapy Association (AOTA) board of directors encouraged the development the Centennial Vision to promote the future of the profession of occupational therapy. The goal of developing the Centennial Vision was to ensure that

“individuals, policymakers, populations, and society value and promote occupational therapy’s practice of enabling people to prevent and overcome obstacles to participation in activities they value, to prevent health related issues, improve their physical and mental health, and secure well-being, and enjoy a higher quality of life” (Christiansen, 2004, p.10).

The American Occupational Therapy Association supports and encourages occupational therapy practitioners to be involved in occupation-based health promotion and disease and disability prevention (American Occupational Therapy Association, 2008; Reitz & Scaffa, 2010). Health promotion is defined as “the process of enabling people to increase control over and to improve their health” (Wilcock, 2010). Health promotion allows individuals to improve “physical, mental, and social well-being” in order to prevent disease and disability (American Occupational Therapy Association, 2008). Health promotion has the potential to greatly improve health status of individuals (Reitz & Scaffa, 2010). Furthermore, AOTA recognizes that “health is supported when individuals are able to engage in occupations” which allow individuals to actively participate throughout their daily routine (American Occupational Therapy Association, 2008).

Occupational therapy practitioners have the expertise to help individuals living with amputations to overcome the physical and emotional limitations associated with amputations. By assisting individuals with amputations in overcoming these barriers, individuals will have improvements in quality of life. By improving quality of life, individuals will have increased occupational performance due to greater success in independently completing daily occupations (American Occupational Therapy Association, 2011). Occupational therapy practitioners have the ability to facilitate optimal performance of daily occupations to enhance quality of life (Gulick, 2011). Occupational therapy “greatly enhances the health and quality of life of

independent-living adults” by using a holistic approach to ensure the patient achieves their personal goals (Reitz, 2010; Gulick, 2011). Furthermore, by promoting health and wellness for individuals with amputations, occupational therapy practitioners are ensuring individuals have the functional capacity to maintain satisfying relationships, work, and play experiences (American Occupational Therapy Association, 2008).

Models of Practice

The model of practices that will be used in the program are the Role Acquisition model (Mosey, 1986) and The Biomechanical model (Flinn, Jackson, Gray, Zemke, 2008). Principles of the program to improve quality of life for individuals with limb loss will be strongly based on these models. These principles include:

- a) cultural considerations of the participants will determine the types of learning materials presented in the program.
- b) learning will take place through demonstration, discussion, and hands-on experiences.
- c) learning will be enhanced through peer support.
- d) learning will begin at the individual’s initial skill level and progress at a rate that is comfortable for the individual.
- e) active participation will be used when possible to facilitate learning.
- f) feedback will be provided to enhance learning.
- g) life roles will be incorporated into the program.
- h) strength, range of motion, flexibility, and endurance will be maintained and increased through demonstration, practice, and encouragement.
- i) frequency of exercise will be gradually increased to promote aerobic training.
- j) intensity of exercise will be gradually increased to promote aerobic training.

Program Objectives

The goal of the program, Improving Quality of Life of Individuals with Limb Loss, at The University of Toledo Medical Center Outpatient Rehabilitation is to enhance health-related quality of life for individuals with amputations.

The program objectives include:

- At the conclusion of the eight week program, the participants will demonstrate a statistically significant increased performance in self-identified goals measured by the Self-Identified Goal Assessment (SIGA) (Melville, Baltic, & Nelson, 2002).
- At the conclusion of the eight week program, participants will experience statistically significant increases in lower extremity function as measured by the Chair Stand Test (Jones, Rikli, & Beam, 1999).
- At the conclusion of the eight week program, participants will experience statistically significant increases in physical health as measured by the physical health sub-section of the SF-12v2 Health-Related Quality of Life assessment (Ware & Sherbourne, 1992).
- At the conclusion of the eight week program, participants will experience statistically significant increases in functional status as it relates to ambulating as measured by the Amputee Mobility Predictor (Gailey et al., 2002).
- At the conclusion of the eight week program, participants will experience statistically significant increases in daily level of activity as measured by the Amputee Activity Survey (Day, 1981).
- At the conclusion of the eight week program, the participants will experience statistically significant increases in endurance and functional exercise capacity as measured by the Six Minute Walk Test (American Thoracic Society, 2002).

- At the conclusion of the eight week program, the participants will experience decreased in perceived exertion immediately after the Six Minute Walk Test as measured by the Borg Scale (Borg, 1982).
- At two month follow-up, the participants will demonstrate performance in identified goals measure by the SIGA greater than or equal to the post-test score (Melville, Baltic, & Nelson, 2002).
- At two month follow-up, participants will demonstrate lower extremity function greater to or equal to the post-test as measured by the Chair Stand Test (Jones, Rikli, & Beam, 1999).
- At two month follow-up, participants will experience maintenance or increases in physical health as measured by the physical health sub-section of the SF-12v2 Health-Related Quality of Life assessment (Ware & Sherbourne, 1992).
- At two month follow-up, participants will experience maintenance or increases in functional status as it relates to ambulating as measured by the Amputee Mobility Predictor (Gailey et al., 2002).
- At two month follow-up, participants will experience maintenance or increases in daily level of activity as measured by the Amputee Activity Survey (Day, 1981).
- At two month follow-up, the participants will demonstrate endurance and functional capacity greater than or equal to the post-test as measured by the Six Minute Walk Test (American Thoracic Society, 2002).
- At two month follow-up, the participants' scores of perceived exertion immediately after the Six Minute Walk Test, as measured by the Borg Scale, will be equal to or less than the post-test (Borg, 1982).

Marketing and Recruitment of Participants

The stakeholder who will be approached in the marketing campaign is the director of rehabilitation at UTMC Outpatient Rehabilitation. The director of rehabilitation at UTMC Outpatient Rehabilitation manages aspects related to programming at UTMC Outpatient Rehabilitation. Therefore, it is important to consult the director of rehabilitation at UTMC Outpatient Rehabilitation in order to properly market the program. The director of rehabilitation will be able to provide information regarding the logistics of marketing at the facility. Furthermore, the director may have certain guidelines that need to be followed when marketing and recruiting at UTMC Outpatient Rehabilitation. The director of rehabilitation also has the resources to spread materials to other facilities in order to recruit individuals for participation in the program.

The rehabilitation practitioners will also have an important role in the marketing campaign. The rehabilitation practitioners interact with the patients and will recruit patients during appointments. Furthermore, the rehabilitation practitioners interact with prosthetists and physicians regarding patients with amputations. By interacting with prosthetists and physicians, the rehabilitation practitioners have the ability to spread information related to the program. Therefore, it is important to approach the rehabilitation practitioners in order to discuss the marketing campaign and their role in the campaign.

Finally, the patients with amputations at UTMC Outpatient Rehabilitation will also be approached in the marketing campaign. It is essential that the marketing campaign appeal to the patients with amputations at UTMC Outpatients Rehabilitation. If the marketing campaign is not appealing and directed to these individuals, the program will not be successful.

Marketing Materials

Several marketing strategies will be used to promote the program at UTMC Outpatient Rehabilitation. First, the flyer attached in Appendix E will be used to recruit participants for the program. The flyer will be posted at UTMC Outpatient Rehabilitation. Furthermore, a flyer will be given to the patients with amputations during their appointments at UTMC Outpatient Rehabilitation. The employees at UTMC Outpatient Rehabilitation will be educated regarding the script to be used when providing the flyer to patients with amputations. The script will allow the employees to promote the program and answer questions. In addition to posting the flyer at the front reception area and distributing the flyer to the patients with amputations at UTMC Outpatient Rehabilitation, the flyer will also be distributed to local prosthetic clinics and rehabilitation centers. Upon distribution of the flyers to the prosthetic clinics and rehabilitation centers, a script will also be provided in order to ensure the proper information about the is being discussed in the community. The script includes information regarding dates, time, and location of the program, the purpose of the program, and the number of participations that will be accepted into the program. The script is attached in Appendix F.

Finally, the flyer and information regarding the program will be sent to the Amputee Coalition of America. The Amputee Coalition of America provides information about support groups and local programs for individuals with amputations. Therefore, it is likely that the Amputee Coalition of America will post information about the program at UTMC Outpatient Rehabilitation.

Participant Recruitment

Individuals living with amputations will be recruited to participate in the program from UTMC Outpatient Rehabilitation, local prosthetic clinics, and rehabilitation centers.

Recruitment of individuals for the program will begin five weeks prior to the beginning of the program. This will ensure the program is adequately represented before the start of the program. Five weeks prior to the start of the program, the flyers and scripts will be distributed to local prosthetic clinics and rehabilitation centers. Furthermore, the rehabilitation practitioners at UTMC Outpatient Rehabilitation will distribute the flyers during patient with amputations appointments.

Participants of the program will be 18 years of age or older. There will be no upper age limit for the program because all individuals living with amputations should have the opportunity to receive information about techniques to improve their overall health-related quality of life. In order to participate in the program, it is required that the participants are at least six weeks post-op. This regulation will ensure that all wounds have been completely healed and that there will be no complications following surgery. However, individuals may participate in the program before six weeks post-op if the participant receives approval from a physician. Furthermore, before participating in the program, the participants will be required to have a physician signature indicating that they are medically cleared to participate. The physician clearance form is included in Appendix G. In addition to the physician signature, the participants will be required to complete a demographic form. The form will include information regarding age, gender, past medical history, reason for amputation, level of amputation, year of amputation, and food allergies. The demographic form is included in Appendix H.

The program will be limited to 10 participants. It is important that the participants receive adequate one-on-one interaction with the instructor and volunteers during the the program in order to ensure proper techniques.

Volunteer Recruitment

In order for the program to be a success, volunteers are necessary throughout the weekly sessions. The volunteers will be recruited for four weeks prior to the beginning of the program. During the semi-structured interviews, it was found that the employees are very supportive of programming. As a result, volunteers will be recruited from the employees of UTMC Outpatient Rehabilitation. Volunteers will also be recruited from the occupational therapy and physical therapy students at The University of Toledo Main Campus. Finally, occupational therapy assistant and physical therapy assistant students from Owens Community College will be recruited. The volunteers will not be required to attend all sessions. However, the volunteers will be encouraged to attend all sessions in order to assist the occupational therapy practitioner and ensure participant safety. In order to guarantee that there are plenty of volunteers for each program session, a schedule of volunteers will be created once the volunteers have been recruited.

The purpose of the volunteers is to assist the occupational therapy practitioners with conducting the pre-test and post-test assessments and to ensure participant safety throughout the program. The volunteers will help the participants complete the demographic sheets, the Chair Stand Test, AMP, and the SF-12v2 Health-Related Quality of Life assessment while the occupational therapy practitioner is completing the SIGA and AAS individually with the participants. Once the above assessments have been completed, the volunteers will walk with the participants during the Six Minute Walk Test to ensure safety. Furthermore, the volunteers will assist the occupational therapy practitioner is calculating the Borg Scale and the distance the participants walked during the Six Minute Walk Test. In addition to assisting the occupational

therapy practitioner with these assessments, the volunteers will also have an essential role of ensuring participant safety throughout the weekly sessions of the program.

An in-service will be conducted the week before the start of the program. During the in-service the volunteers will receive an introduction to the program and the goal of the program. Furthermore, the volunteers will learn the procedures of each assessment. The schedule of volunteers will also be created at this time. If a volunteer is unable to attend the in-service day, they will still have the opportunity to volunteer during the program.

Programming

The program is eight weeks in duration. The program will occur once a week on Wednesday. The weekly sessions will occur for an hour-and-a-half each Wednesday evening. The key to the weekly interventions is to motivate participants to participate in physical activity, modify diet, and learn techniques to improve health-related quality of life. The participants will not be discharged from the program. The eighth session will finalize the program.

The program will occur in UTMC Outpatient Rehabilitation Clinic. The clinic is spacious which will allow the participants to spread out during the program. There are mat tables that the participants will be able to use if necessary. Furthermore, there is adequate space to safely complete the Six Minute Walk Test. Furthermore, the clinic provides chairs that will be used as necessary throughout the program. Finally, the clinic has a kitchen area for demonstration that may also be used throughout the program.

Program Outline

The outline below displays the topic of each weekly session.

Week	Intervention
1	<ul style="list-style-type: none"> • Introduction to the program • Open discussion • Complete demographic form • Pre-tests—SIGA, Chair Stand Test, SF-12v2, Amputee Mobility Predictor, Amputee Activity Survey, Six Minute Walk Test, Borg Scale
2	<ul style="list-style-type: none"> • Introduction • Warm-up • Physical Activity • Review
3	<ul style="list-style-type: none"> • Introduction • Warm-up • Physical Activity • Diet Modification Techniques • Review
4	<ul style="list-style-type: none"> • Introduction • Warm-up • Physical Activity • Energy Conservation Techniques • Review
5	<ul style="list-style-type: none"> • Introduction • Warm-up • Physical Activity • Skin Care/Skin Desensitization/General Limb Hygiene/Phantom Pain/Grieving Limb Loss • Review
6	<ul style="list-style-type: none"> • Introduction • Warm-up • Physical Activity • Driving with Limb Loss • Review
7	<ul style="list-style-type: none"> • Introduction • Warm-up • Physical Activity • Participation in Leisure Occupations • Review
8	<ul style="list-style-type: none"> • Post-tests—SIGA, Chair Stand Test, SF-12v2, Amputee Mobility Predictor, Amputee Activity Survey, Six Minute Walk Test, Borg Scale • Review • Program Wrap-up
2 month follow-up	<ul style="list-style-type: none"> • SIGA, Chair Stand Test, SF-12v2, Amputee Mobility Predictor, Amputee Activity Survey, Six Minute Walk Test, Borg Scale

The first week of the program will include an introduction to the program, an open discussion between participants and instructor, and the pre-tests will be administered. The introduction to the program will include the instructor, volunteers, and all participants introducing themselves to one another. Furthermore, the instructor will describe the goal and objectives of the program along with the topics for each week program. Following introductions, an open discussion between the instructor and participants will occur. The open discussion is important to help participants feel comfortable and to determine if there are any specific topics the participants would like to learn or discuss during the program. If the participants would like to discuss a certain topic that is not currently in the program outline, the instructor should make the necessary adjustments in order to meet participant needs. The introduction and open discussion should not take longer than a half hour in order to ensure there is adequate time to complete the pre-tests. The purpose of each of the assessments will be explained to the participants along with a demonstration of how to complete each assessment. The participants will be asked to complete the demographic sheet and SF-12v2. If the participants have questions regarding the demographic sheet or SF-12v2, the volunteers will assist the participants. After completing the demographic sheet and SF-12v2, the participants will complete the Chair Stand test, AMP, and AAS with the volunteers. While the participants are completing assessments with the volunteers, the occupational therapist will complete the SIGA individually with each participant. Once the occupational therapy practitioner has completed the SIGA with one participant, the next participant will be asked to complete the assessment. This will continue until all participants have completed the SIGA with the occupational therapy practitioner. Once all participants have completed the demographic sheet, SIGA, SF-12v2, Chair Stand test, AMP, and AAS, the group will complete the Six Minute Walk Test as a whole. After completion of the

Six Minute Walk Test, the participants will immediately indicate their perceived level of exertion using the Borg Scale. Furthermore, the occupational therapy practitioner and volunteers will calculate the distance that the participants walked during the Six Minute Walk Test. After completion of the assessments, the information will be stored in a file folder assigned to each individual participant in locked cabinets at UTMC Outpatients Rehabilitation.

The Self-Identified Goals Assessment (SIGA) is designed to help participants identify meaningful goals and to make judgments related to progress of those goals. The participants of the program will identify one to five goals related to occupational performance in the home, at work, and leisure occupations. The individual will indicate how well they are able to complete the tasks they would like to be able to complete on a scale from zero to ten (Melville, Baltic, Bettcher, & Nelson, 2002). The SIGA will be used to determine if the health and wellness program has an impact on participants' ability to complete occupations that are meaningful and purposeful.

The Chair Stand Test measures lower body strength which is beneficial for occupational performance of individuals living with amputations for transfers and functional mobility. The participant sits in a straight back chair without armrests with their arms folded across their chest. The participant stands up and sits down as quickly as possible for 30 seconds while keeping their arms folded across their chest. The number of times the participants comes to a full standing position will be counted. The chair stand test will determine if the physical activity portion of the health and wellness program is providing proper strengthening techniques.

The SF-12v2 Health-Related Quality of Life Survey consists of 12 questions that can be completed in approximately 10 minutes. This is the shorter version SF-36v2. The SF-12v2 will be used instead of the SF-26v2 due to time when administering assessments. The questions of

the SF-12v2 Health-Related Quality of Life Survey measure functional health and well-being from the perspective of the participant. The survey can be administered to individuals 18 years of age and older. The SF-12v2 is a practical and reliable measure of health (Quality Metric, 2012). This survey will be an indicator for improvement and declines in health throughout the program. The SF-12v2 will provide essential data about functional health and well-being of the participants (Quality Metric, 2012).

The purpose of the Amputee Mobility Predictor (AMP) is to objectively assess an individual's occupational performance and ability to complete functional mobility with a prosthetic device. The AMP assesses factors such as transfers and balance which are important for independence in meaningful occupations. The score range for the AMP is 0 to 42 points. The items in the AMP are organized in increasing difficulty in order to progressively assess the participant. The items assess the individuals' ability to complete sitting balance tasks, transfers, standing balance tasks, gait, and ability to maneuver obstacles. The AMP is relatively easy to administer in 15 minutes or less. The assessment has a simple scoring system, requires little space and equipment to administer, and has a high inter- and intrarater reliability (Gailey et al., 2002).

The Amputee Activity Survey (AAS) is a 20-item survey that allows individuals to describe their occupational performance when completing leisure and work occupations. The items assess individuals' abilities to don and doff the prosthesis, the length of time the prosthesis is worn, the ability to climb stair, employment details, daily occupation responsibilities, walking habits, and social participation. The AAS takes approximately 15 minutes to administer. The AAS should be conducted by an individual that has experience with rehabilitation techniques in the event that supplementary questions need to be asked of the participant. The overall activity

score of the AAS is between -70 and 50 (Day, 1981). This survey is beneficial to assess participant's daily occupations and activity level throughout their daily routine.

The Six Minute Walk Test objectively evaluates individuals' functional capacity for exercise. Furthermore, the six-minute walk test also assesses endurance during functional mobility and completion of bathing, dressing, and home management occupations. When completing this assessment, individuals will walk at his or her self-selected walking speed for a total of six minutes with assistive devices, if needed. The individual may take rest breaks; however, the timer for six minutes will not stop. At the completion of six minutes, the total distance the individual walked will be calculated (American Thoracic Society, 2002).

The Borg Scale is a simple technique to rate perceived exertion during and following physical activity. Perceived exertion is an individual's rating of physical activity intensity (Borg, 1982). The Borg Scale is calculated based on individuals' "physical sensations during physical activity including increased heart rate, increased respiration, increased sweating, and muscle fatigue" (Reitz, 2010). Therefore, the Borg Scale can be used as a measurement to determine the level of intensity of physical activity (Borg, 1982). The 15 point Borg Scale will be used throughout the program. A sheet to record the Chair Stand Test, the distance walked during the Six Minute Walk Test, and the Borg Scale is included in Appendix I.

During the second week of the program, the participants will receive an introduction to the topic of physical activity and how physical activity is related to individuals living with amputations. The participants will be educated on the importance of frequency, duration, and intensity of exercise, WHO guidelines for physical activity, the Healthy People 2020 guidelines, research findings related to physical activity, and the benefits of physical activity for individuals with amputations. The participants will be provided with exercise sheets of the stretching and

exercises that are completed during the physical activity section. The participants will be encouraged to follow the WHO guidelines for physical activity on days that they do not attend the program.

Following the second week introduction, a warm-up with light stretching will occur. Stretching will help maintain or improve limb function. It will be especially important to focus on hip stretching techniques during this time. Once the participants are warmed up, the physical activity section will begin. The participants will complete an exercise regime that focuses on overall strength, endurance, range of motions, flexibility, and balance. The occupational therapy practitioner and volunteers of the program will demonstrate the exercises and then encourage the participants to complete the exercise in order to facilitate learning. The exercises will be completed individually and with a partner. Participants will be educated about how the exercises can be modified for their individual skill and ability level. For example, when completing strengthening exercises, each participant will be provided with weighted balls that will provide him or her with a just-right challenge. One participant may need a two pound weighted ball whereas another participant may need a ten pound weighted ball in order to receive an individualized challenge. The objective of each exercise is to provide the participant with the just-right challenge in order to encourage gains in physical activity in preparation for occupation. Therefore, each participant will have the opportunity to choose which exercise is best for his or her ability and skill level. The participants will be encouraged to challenge themselves while also being aware of not over-challenging themselves. When the exercises are completed with a partner, the participants will be matched according to ability to ensure each individual receives the benefits from the physical activity. The participants will also be educated about the importance of frequency and intensity of physical activity. Furthermore, participants will receive

immediate feedback from the occupational therapy practitioner and volunteers regarding their techniques during the exercise regime. It is important for participants to initially complete these exercises. By creating a strong foundation of flexibility, strength, endurance, and range of motion, participants will have the ability to complete more occupation-based tasks such as gardening, shoveling snow, dancing, and swimming.

At the completion of the class period, the participants will be provided with documents that offer examples of the exercises completed during the first session. The participants will be encouraged and educated about the benefits of exercising more than one day a week. The participants will also have the opportunity to ask questions and review the topic covered.

Similar to the second week of the program, the third through eighth week of the program will begin with an introduction of the topic that will be covered during the specified week and how the topic relates to individuals with amputations. Each week, after the introduction, the participants will complete a warm-up of light stretching. Following the stretching, the participants will learn three to five new exercise techniques that can be added to the exercise regime learned in week two. After learning new techniques, the class will transition into the new topic of the week. In order to conclude each weekly class, the occupational therapy practitioner and participants will review and discuss the topic covered and answer any questions that participants may have about the previously learned topic. During the review session of the second week, the participants will be encouraged to bring in food labels of their favorite foods for the third session.

During the third week of the program, the participants will learn about diet modification. The participants will learn the importance of consuming a well-balance diet. The participants will learn how to read food labels, and they will also learn the recommended daily consumption

of fruits, vegetables, whole grains, fat, sodium, sugar, fiber, and protein. When learning about consuming a healthy diet, the participants will also learn how diabetes is affected by food consumption. In order to properly educate the participants on these topics, the website www.choosemyplate.com will be incorporated into the third week of the program. From this website, the occupational therapy practitioner will have the ability to educate the participants on which types of food are in each food group, how much of each food group is needed in a day, the benefits of consuming this food group, and tips in order to change routines help implement these food groups into their daily routine. Furthermore, the occupational therapy practitioner will discuss how diet modification affects weight management with the participants. The website also provides daily food plans and other educational materials that can be used in the program (United States Department of Agriculture, 2013). In addition to educating the participants about information from the website www.choosemyplate.com, it is also important to educate the participants about the website www.eatright.org. This is the Academy of Nutrition and Dietetics website. The occupational therapy practitioner will use this website to provide the participants with information about healthy weight, food and nutrition, and proper eating with diabetes. The occupational therapy practitioner will use “Understanding Food Labels” brochure purchased from the Academy of Nutrition and Dietetics to educate the participants on reading food labels (Academy of Nutrition and Dietetics, 2013). Once the participants have an understanding of the basics of food labels and the recommended dietary intake, they participants will analyze food labels of foods they frequently consume. This hands-on task will allow the participants to have an understanding of the need to change habits and routines that are currently being used in their daily food consumption. There will also be a discussion related to meal planning and making healthy choices while grocery shopping. The participants will be provided with a food log in

order to complete meal planning for grocery shopping. Following proper education related to food labels and food groups, the participants will be provided with healthy foods during this weekly session in order to practice making a simple meal. While making a simple meal, there will be an open discussion related to changing habits and routines in order to implement healthy eating habits into a daily routine.

During the fourth week of the program, the participants will learn about energy conservation techniques. Energy conservation provides many benefits. By using energy conservation techniques, individuals “preserve physical function, promote wellness, and maintain a sense of personal efficacy and/or enhance athletic performance” (Matthew, 2008). Individuals living with amputations exert a great deal of energy while performing daily occupations. Therefore, it is necessary to discuss energy conservation techniques with the participants. Furthermore, by learning energy conservation techniques, the participants will have a better understanding of the capabilities while performing daily occupations. The types of energy conservation techniques that are implemented into the program will be based on the needs of the participants. However, types of energy conservation techniques that may be implemented into the program could include but are not limited to bathing, dressing, household management, shopping, meal preparation, and child care. The participants will practice the energy conservation techniques, following demonstration, to ensure they are properly completing the techniques. For example, when completing meal preparation, assemble all of the ingredients prior to making the meal, use a Lazy Susan, store frequently used items at a level that is easy to reach, use a dishwasher, sit while preparing foods, and take rest breaks. The participants will also be provided with energy conservation resources.

During the fifth week of the program, the participants will learn about skin care, skin desensitization, general limb hygiene, phantom pain, self-image, and grieving limb loss. Many individuals with amputations are also diabetic. Therefore, it is essential that the participants understand the importance of skin care and limb hygiene. These topics are also important for those individuals that do not have diabetes. It is important to maintain skin integrity in order for proper fit of prosthetic devices. After an amputation occurs, skin desensitization techniques are important. Therefore, these techniques will be incorporated into the program. The participants will have the opportunity to complete hands-on techniques of skin care, desensitization, and general limb hygiene during this session. If the participants feel uncomfortable participating as a group, they will have the opportunity to move away from the group to complete the techniques on their own. These techniques include skin checks of the residual limb and the sound extremity, teaching massage techniques, and proper hygiene of the residual limb and prosthetic components. Furthermore, the participants will be educated on the importance of foot care. For example, participants should check their feet every day for cuts, scrapes, and sores, wear socks with padding under the toes, wear properly fitted shoes, use arch support, wash their feet daily, have their toenails trimmed by a podiatrist, and limit the time barefoot around the house (Thompson, 2012). These techniques are important in order to limit infection and the possibility of future amputations. The occupational therapy practitioner will observe while the participants are practicing skin checks and massage techniques in order to ensure the participants are properly performing the techniques and to provide feedback to the participants.

In addition to learning about skin checks, massage techniques, limb hygiene, the participants will also learn about the basics of phantom limb pain because chronic phantom pain and general residual limb pain. Phantom limb pain has the potential to decrease participants'

health-related quality of life and increase individuals' dependence on medicine. In order to cope with phantom pain, the participants will be educated about mirror therapy. Mirror therapy may help the participants reduce their phantom limb pain. The theory behind mirror therapy is that when an individual gets visual feedback from the mirror, the learned pain can sometimes be "unlearned" (Cone, 2012). After being educated about mirror therapy, the participants will have the opportunity to practice mirror therapy techniques. If a participant has a bilateral amputation, a volunteer will use their extremity to assist the participant in completing mirror therapy. Finally, the participants will learn about techniques to overcome grief that may be associated with the loss of a limb. The participants will have the opportunity to share personal stories of phantom limb pain, self-image, and loss of a limb or limbs with the group. The participants will learn coping techniques in order to cope with phantom limb pain and how to apply these techniques during their daily routine.

Finally, during the fifth week of the program, the participants will learn about the stages of grief and methods to cope with limb loss. Each participant will be affected differently by limb loss. As a result, it is important to take this into consideration when discussing grief caused by limb loss. In addition to each participant being affected by limb loss differently, there are many factors that will alter an individual's recovery. These factors include the cause of the amputation, the level of the amputation, the participant's age and health status, the participant's ability to cope, and if the participant has a strong support system. These factors will also be discussed during the sixth week of the program. During this topic, it is important to reinforce that the recovery process is individualized. The Phases of Recovery used by the Amputee Coalition of America will be implemented into the program (Isenberg, 2009). The Phases of Recovery are included in Appendix K. After being educated about grief, the participants will

have the opportunity to have an open discussion about their limb loss. Peer support will be essential when discussing the topic of grief.

At the end of the weekly session, the participants will be provided with handouts related to the information covered in this weekly session. The handout will be a reference for the participants in the event that questions arise related to the learned techniques.

During week six, the participants will learn about driving with an amputation. The certified driver rehabilitation specialists have specialized education and training to allow individuals with amputations to coordinate, plan, and implement driving techniques into their occupations of daily living (Lane & Hanford, 2012). A certified driving rehabilitation specialist will be asked to come to the session in order to discuss driving with the participants. The certified driving rehabilitation specialist will discuss acquiring a prescription for adaptive driving equipment and methods that need to be taken in order to complete on road training. In addition to the certified driver rehabilitation specialist speaking during the sixth session, the participants will also learn about the Adaptive Driving Alliance. The Adaptive Driving Alliance “is a nationwide group of vehicle modification dealers who provide van conversions, hand controls, wheelchair lifts, scooter lifts, tie downs, conversion van rentals, paratransit and other adaptive equipment for drivers and passengers with disabilities” (Adaptive Driving Alliance, 2004). The Adaptive Driving Alliance is an important educational tool to incorporate in the program because after an amputation many individuals feel as though they have lost their independence due to the inability to drive.

During the seventh week of the program, the participants will be educated about participation in leisure occupations. The seventh week of the program will be based on the participants’ interests. The participants’ interests will be formulated through the SIGA, AAS,

and discussion throughout the weekly programming. During this session of the program, a speaker from the Orthotic and Prosthetic Activities Foundation (OPAF) will be present in order to discuss leisure occupations following an amputation. The OPAF speaker will educate the participants about leisure participation. Furthermore, the OPAF speaker will provide information related to adaptive sports programs and the benefits of participating in physical activity (Orthotic and Prosthetic Activities Foundation, 2013). By incorporating an OPAF speaker into the program curriculum, the participants will be provided with the opportunity to enjoy their daily routine which will improve their quality of life. Following the OPAF speaker, the participants will have the opportunity to practice leisure occupations of their interest such as golfing, gardening, and bowling.

During weeks two through seven of the program, the outline of the program includes an introduction, warm-up stretches, physical activity, a new topic of the week, and a review of the session. The introduction, warm-up, and physical activity should take approximately 30 minutes to complete. The goal of this portion of the weekly session is to encourage continued participation in physical activity. However, it is also important to provide adequate time to complete the new topic of the week. As a result, the new topic for the week should be allotted for approximately 50 minutes. Finally, the review of the weekly session will take approximately 10 minutes to complete each week. The allotted times for topics each week are approximate, and the occupational therapists should determine exact times at his or her discretion.

During the eighth week of the program, the assessments will be completed in the same manner as the first week of the program. The occupational therapist will complete the SIGA with the participants while the volunteers complete the other assessments. The occupational therapist will assist with the additional assessments as needed. Furthermore, during the eighth

week, a review of the previous sessions will be conducted. At this time, the participants will have the opportunity to practice any techniques learned in the program and ask questions.

Participants will also be informed that in two months they will be contacted to complete follow-up assessments.

Two weeks prior to the two month follow-up date, the participants will be contacted by the occupational therapist to schedule a meeting in order to complete the follow-up assessments. The two-month follow-up assessments will be used in order to determine if participants retained the information and fitness skills that were provided in the program. Due to potential scheduling conflicts, the two month follow-up will be completed individually by the occupational therapist either at UTMC Outpatient Rehabilitation or in the participant's home. During this two-month follow-up meeting, the participants will once again complete the SIGA with the occupational therapist. If volunteers are unable to attend the meeting, the occupational therapist will also administer the Chair Stand Test, SF-12v2, AMP, AAS, the Six Minute Walk Test, and the Borg Scale.

Documentation

Documentation regarding the demographic sheet, pre-tests, post-tests, and two-month follow-up will be kept in a locked file at UTMC Outpatient Rehabilitation. The goal setting process will be based on the participants' self-identified goals from the SIGA (Melville, Baltic, Bettcher, & Nelson, 2002). Although the program does not focus on specific goals of the individuals, the purpose of using this assessment is to ensure that the participants are able to use the techniques learned in class to achieve their goals. For example, if an individual has a goal of being able to prepare a meal for his or her family, energy conservation techniques learned in the class will assist the individual in the kitchen. By using energy conservation techniques while

cooking a meal, the participant has the potential to achieve their goal of making a meal for his or her family. Furthermore, the use of the SIGA as an assessment in the program will allow the occupational therapy practitioner to have an idea of what types of skills need to be addressed throughout the program. If a participant identified a certain leisure occupation as a goal, the occupational therapy practitioner will have the opportunity to incorporate this specific leisure occupation into the program.

Furthermore, the AAS will be used in order to assess the participants' functional activity level when completing occupations. The use of the AAS in the program will allow the occupational therapy practitioner to have an understanding of the participants' activity level in daily occupations. The scores will be used as a determinant of which occupations should be included throughout the program.

At the completion of the program, the participants will be provided with a sheet that indicates the results of the pre-test and post-test. Therefore, the occupational therapists will be able to discuss with the patient in which areas the patients had improvements, declines, or maintained. The occupational therapist will also be able to analyze the results of the assessments in order to determine which areas of the program need to be altered for the next session. A copy of this document will be kept in a locked file at UTMC Outpatient Rehabilitation. This pre-test/post-test score sheet is included in Appendix J.

Finally, the occupational therapist will also make notes regarding discussion from the review at the end of each weekly session. This will allow the occupational therapist to make changes to future sessions.

Coordination of Care

The occupational therapy practitioner is the primary care coordinator. Prior to the eight week program, the rehabilitation director, volunteers, and occupational therapy practitioner will meet to discuss the dynamics of the program. The meeting will allow each stakeholder to fully understand their role in the program. During this time, the volunteers will learn the proper technique to administer each assessment. The volunteers will also have the opportunity to practice administering the assessments. This meeting is essential in order for the program to be successful. A meeting will also be held after the third week of the program to determine if changes need to be made to the program.

Staffing and Budgeting

Staffing

The program will be directed by a part-time occupational therapy practitioner with the support of volunteers from the community. Appendix L provides a detailed job description for the occupational therapy practitioner. Furthermore, Appendix M provides a sample flyer that will be used to advertise for the occupational therapy practitioner position at UTMC Outpatient Rehabilitation. The occupational therapy practitioner will work approximately ten hours per week. The weekly hours may vary depending on the stage of the program. The annual salary estimate found in Appendix N is based on the eight week program being in session with ten participants.

During week one, the occupational therapy practitioner will purchase necessary equipment, schedule the facility, and pass out the recruitment flyers and scripts in order to begin recruiting participants and volunteers. During weeks one through five, participants of the program will be recruited. During weeks one through four, the occupational therapist will recruit

volunteers to help with the program. During week five, the occupational therapy practitioner will prepare and conduct an in-service for all volunteers of the program. The program will begin during week six. During weeks six through 13, the occupational therapist will spend his or her time preparing for the sessions, analyzing assessments and evaluations, documenting and completing paperwork, setting up for the program, cleaning up after the program, and conducting the weekly program. During week 19 and 20, the occupational therapist will schedule the two-month follow-up with all of the participants. The two-month follow-up assessment will be complete during week 22.

The program will cycle three times through the year. During week 14, recruitment for the second session will begin which will start the second cycle of the program.

Budgeting

The budget for the program is provided in Appendix N. The budget is a summary of the required cost in order to successfully implement the program at UTMC Outpatient Rehabilitation. The budget is separated into personnel, supplies and equipment, and in-kind contributions. The estimated hours and wages of the occupational therapist are provided in the budget as personnel. The occupational therapy practitioner's wages are based on the median hourly wage in Ohio reported by the Bureau of Labor Statistics (2012). Fringe benefits were not incorporated within the budget because the occupational therapy practitioner will be working part-time.

In order to successfully complete the program, a variety of supplies and equipment are required. These items are provided in Appendix N. The exercise equipment is necessary in order to complete the physical activity section of the program. The costs of these supplies were obtained from Medco Sports Medicine. The UTMC Outpatient Rehabilitation Clinic has some

equipment that can be used in the program. However, UTMC Outpatient Rehabilitation does not have an adequate amount of equipment for ten participants to complete exercise as a group.

Once the exercise equipment has been purchased, it will be reused in following sessions of the program. Therefore, the cost of exercise equipment will be eliminated from the budget following the first session. The water, granola bars, and hard candy are necessary to help the participants remain hydrated during the program and also ensure proper blood glucose levels in the participants. The costs of these items were obtained from Samsclub.com. The quantity of each item in the budget is an estimation of amount that is needed to successfully complete the health and wellness program with ten participants of different levels and abilities per session.

The UTMC Outpatient Rehabilitation will fund the in-kind contributions. The in-kind contributions will include but is not limited to computer use, bathroom use, heat, electricity, air conditioning, office equipment and supplies, treadmills, therabands, footstools, and disinfectant solution. The cost of the in-kind contributions is estimated.

Funding Sources

A funding source that could fund the program to improve health-related quality of life for individuals with limb loss is The Hearst Foundations. There are two foundations within The Hearst Foundation. The Hearst Foundation, Inc. and the William Randolph Hearst Foundation operate as one entity and share the same funding guidelines, leadership, and staff. The Hearst Foundations are national philanthropic resources for organizations and institutions working in the fields of education, health, culture, and social justice. The mission of the Hearst Foundations is “to ensure that people of all backgrounds have the opportunity to build healthy, productive and inspiring lives” (Hearst Foundations, 2013). A goal of the Hearst Foundations is to improve health and quality of life in the United States. Finally, the Hearst Foundations are committed to

growing programs to create long-term improvements in the United States. The goal of the program for individuals with amputations is to enhance health-related quality of life for individuals with amputations. Furthermore, in the area of health, the Hearst Foundations fund services that promote wellness, prevention, and rehabilitation. Therefore, the goal of the program meets the purpose of the Hearst Foundations.

The Hearst Foundations provides funding to organizations all over the United States including organizations in Ohio. In 2011, the Hearst Foundations donated \$34,165,000 to organizations. The funding provided to organizations related to health ranged from \$25,000 to 2.5 million dollars in 2012 (Hearst Foundations, 2013). As a result of the funding provided to organizations in the previous years, the Hearst Foundations is a potential funding source for the program to improve the quality of life of individuals with amputations.

In order to apply for funding from the Hearst Foundations, all applications must be submitted on the online application portal available at the website hearstfdn.org. Applications are no longer accepted through the mail. Once the application has been submitted to the online portal, the proposal goes through the evaluation process for approximately six weeks. If the purpose of the request and mission of the organization fit within the Hearst Foundations' guidelines, a site visit will be conducted in order to further consider the proposal. There are no deadlines for submitting applications. The Hearst Foundations accepts proposals year round through the online application (Hearst Foundations, 2013).

A second funding source is the Andersons Fund Supporting Organization through the Toledo Community Foundation, Inc. The mission of the Toledo Community Foundation, Inc. is to ensure that nonprofit organizations in Northwest Ohio and Southeastern Michigan have the necessary resources to operate efficiently and effectively (Toledo Community Foundation,

2005). The Andersons Fund Supporting Organization has been created to increase the quality of life of individuals and families in Northwest Ohio and Southeastern Michigan. The funds support programs in education, social services, physical and mental health, neighborhood and urban affairs, natural resources, and the arts (Toledo Community Foundation, 2005).

In 2010, The Andersons Fund Supporting Organization of the Toledo Community Foundation provided funds totaling \$196,644 to 13 area organizations. The funding provided to organizations ranged from \$4,000 to 30,000 dollars in 2010 (Toledo Community Foundation, 2010). As result of the funding provided to organizations in the previous years, the Andersons Fund Supporting Organization of the Toledo Community Foundation is a potential funding source for the program to improve the quality of life of individuals with amputations. (Toledo Community Foundation, 2010).

In order to apply for funding the Andersons Fund Supporting Organization through the Toledo Community Foundation, all applications must be submitted through the online application at www.toledocf.org. The deadline for the Andersons Fund Supporting Organization is April 15. Prior to submitting the proposal to the online application, applicants are encouraged to contact the Toledo Community Foundation.

Finally, the Stranahan Foundation could be a potential funding source for the program to improve quality of life for individuals with amputations. The Stranahan Foundation is family-goverened and located in Toledo, Ohio. Furthermore, the Stranahan Foundation supports individuals, families, and communities in a variety of ways. The purpose of the Stranahan Foundation is to assist individuals and groups in becoming more self-sufficient and independent in order to contribute to the improvement of society. The five priority areas of the Stranahan Foundation include education, physical and mental health, ecological well-being, arts and

culture, and human services (Stranahan Foundation, 2010). In 2012, the Stranahan Foundation donated over 2.8 million dollars to programs all across the United States. In the area of physical and mental health, the Stranahan Foundation provided funds from \$15,000 to \$35,000 in 2012. As result of the funding provided to organizations in the previous years, the Stranahan Foundation is a potential funding source for the program to improve the quality of life of individuals with amputations.

In order to apply for funding from the Stranahan Foundation, a letter of inquiry must be submitted. Full proposals are by invitation only following the letter of inquiry being accepted and reviewed. The Stranahan Foundation will contact organization invited to submit the full proposal. Instructions and forms that are to be completed for letters are inquiry and full grant proposals are located at www.stranahanfoundation.org (Stranahan Foundation, 2010).

Barriers to Funding

There are several barriers to funding the program to improve the quality of life for individuals with amputations. The first barrier is the program creator's inexperience with grants. As a result of the creator being inexperienced with grants, the funder may not want to approve funding for a program with an inexperienced coordinator of the program.

The second barrier is that The Hearst Foundations provides limited funds to new organizations. Therefore, the program to improve the quality of life for individuals with amputations may not be funded by this foundation. As a result, the Hearst Foundations may be best utilized for funds after the first year of the program.

Finally, the three foundations listed above only provide funding for one year. Although the budget of this program is expected to be the highest in the first year due to equipment costs, costs in subsequent years will still be present. As a result, continual funding will be needed in

order to successfully complete the program. Therefore, additional funding source will need to be explored.

Self-Sufficiency Plan

The funding sources that were identified supply funding for a 12 month term. As a result, after a year, additional funding methods will be explored in order to ensure financial support to continue the program to improve health-related quality of life for individuals living with amputations. Once the initial supplies and equipment are purchased for the program, the cost of the program will dramatically decrease. By decreasing the cost of supplies and equipment, the most significant cost of the program will be the salary of the occupational therapist. Due to The University of Toledo Medical Center being dedicated to promoting maximum levels of functioning independence, optimizing community integration, and providing opportunities for participation in prevention efforts in order to reduce the disabling and handicapping effects of impairments and disease, it may be possible to demonstrate the benefit of the program to the director of rehabilitation at UTMC Outpatient Rehabilitation. If the value of the program is evident, the program has the potential to be funded by UTMC in subsequent years. Furthermore, a cost for service could be implemented into the program. By implementing a fee for service, UTMC would not have to fund the entire salary of the occupational therapy practitioner. If UTMC does not fund the program after the first year, it is advised to apply for funding sources provided.

Program Evaluation

The occupational therapy practitioner will complete the outcome evaluation with the participants two months after the completion of the program. During this individual meeting, the occupational therapist will complete the SIGA, AMP, AAS, Chair Stand Test, SF-12v2, the Six

Minute Walk Test, and the Borg Scale with the participants. The occupational therapist will provide the participants with a sheet that allows the participants to examine any changes in these assessments. During this time, the occupational therapy practitioner will also explain to the participant the meaning of these changes.

Process evaluation procedures will be used throughout the program. The process evaluation includes:

- During the first session, the participants will identify one to five goals using the SIGA.
- During the first session, the participants will complete a demographic sheet, AMP, AAS, Chair Stand Test, Six Minute Walk, the Borg Scale assessment, and the SF-12v2 Health Related Quality of Life assessment.
- The participants will attend six out of eight weekly one and a half hour sessions, each session focusing on different areas of improving quality of life.
- During the eighth session, the participants will complete post-tests including the AMP, AAS, Chair Stand Test, Six Minute Walk, the Borg Scale assessment, and the SF-12v2 Health Related Quality of Life assessment.
- The participants will be contact two weeks prior to the two month follow-up in order to set up times to complete the AMP, AAS, Chair Stand Test, Six Minute Walk, the Borg Scale assessment, and the SF-12v2 Health Related Quality of Life assessment.

Attendance to the program will be documented by the occupational therapist during each session of the program. The attendance sheet will be kept in the files at UTMC. The attendance sheet is included in Appendix O. The results of the assessments will be documented in the locked program files located at UTMC Outpatient Rehabilitation along with the attendance sheet.

The participants will receive a copy of the results of the assessments and an explanation of the results.

At the end of the fourth session of the program to improve health-related quality of life for individuals living with amputations, the participants of the program will be provided with the questionnaire included in Appendix P. The evaluation inquires information related to if the program is meeting the participants' expectations on a scale of one to five. The evaluation asks the participants to explain their rating of the program. Furthermore, the evaluation discusses the strengths, weaknesses, and needed changes to the program. The evaluation will be completed during the fourth week of the program because participants will have adequate time to become adjusted to the program. After the fourth week of the program, the participants will have completed three sessions that focus on concerns related to amputations. Therefore, the participants have the ability to form an opinion if the program is meeting their specific needs. Completing the evaluation during the fourth week will provide the occupational therapist with adequate time to adjust the program as needed to meet the participants' expectations.

During the eighth week of the program, the participants, volunteers, and director of rehabilitation at UTMC Outpatient Rehabilitation will complete the evaluation found in Appendix P. This evaluation will also be used as a summative evaluation in order to determine the strengths and weaknesses of the program. By determining the above factors and if the program met the expectations of the participants, the program can be adjusted for the next program session. Therefore, it is important for all the major stakeholders, participants, volunteers, and director of rehabilitation, to complete the evaluation in order to receive an adequate representation of the strengths and weaknesses of the program. The evaluation in Appendix P is designed to ensure all major stakeholders provide input about the program.

The evaluation found in Appendix P is simple and has the potential to be completed in several minutes. The evaluation provides the occupational therapist with valuable information regarding the strengths, weaknesses, and necessary changes that need to be made to the program. As a result, the evaluation is a practical formative and summative evaluation tool.

Timeline

The timeline for the program to improve quality of life for individuals with amputations is in Appendix Q. The major tasks of the program are specified based on week number. During week 14, the program will begin the second session. The program will cycle three times throughout the year.

Letters of Support

A mock letter of support was written as an example from UTMC Outpatient Rehabilitation. The letter is located in Appendix R. In addition to the letter of support from rehabilitation practitioners at UTMC Outpatient Rehabilitation, an expert in the field of amputations and potential participants of the program to improve quality of life for individuals with amputations will also be approached to write letters of support. The rehabilitation practitioners, an expert in the field of amputations, and potential participants would be excellent candidate for writing letters of support because they understand the importance of establishing and maintaining a healthy lifestyle for individuals with amputations. Furthermore, the potential participants will have the capability to discuss their life struggles with an amputation and how a healthy and wellness program to improve quality of life could help he or she overcome these struggles.

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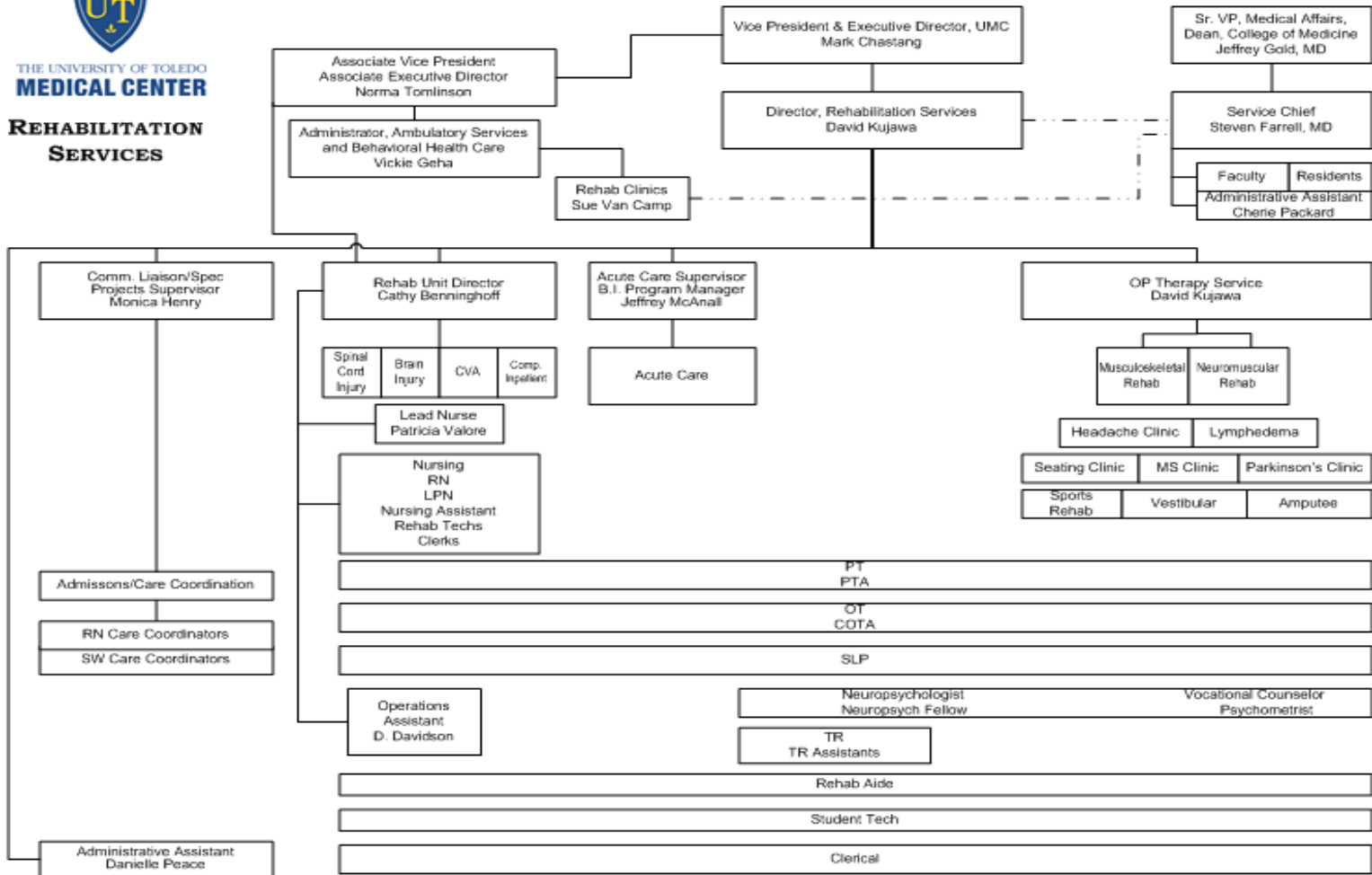
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Appendix A
Organizational Chart



93.673 FTE
119 Employees

Appendix B

Interview One with Stakeholder

Interview at The University of Toledo Medical Center – Outpatient Rehabilitation

Site: Outpatient Rehabilitation at The University of Toledo Medical Center, Toledo, Ohio

Interviewee: Jeff McAnall, MRC, CRC

Introduction

- Find a quiet place for interview
- Introduce myself, assignment, and needs assessment
- Obtain permission to take notes
- Statement of confidentiality—will be using name in paper write-up for my course
- Are they familiar with OT? Explain what OT is and the services we can provide
 - Mr. McAnall was familiar with occupational therapy. Therefore, a review of the term occupation and occupational therapy were discussed. Occupation was described as doing something with meaning and purpose. This includes working with individuals to promote health and enhance function. Occupational therapists work in a variety of settings including schools, rehabilitation facilities, and in the home.

Purpose of Interview

To discuss current programming needs in Outpatient Rehabilitation at The University of Toledo Medical Center (UTMC)

Interview Questions

1. In what capacity do you work with the clients and families in Outpatient Rehabilitation at UTMC?

I manage all outpatient therapies here at UTMC. I am also involved with vocational rehabilitation and consult with individuals here and in the hospital.

2. What types of programs are currently implemented in Outpatient Rehab at UTMC?

There are exercise groups and a group for spinal cord and neurological patients. There is an outpatient brain injury program.

3. How do you determine the need for programming in Outpatient Rehab at UTMC?

The need is determined by the types of patients that are being seen at a certain period of time and if any of the therapists suggest a certain programming idea.

4. What are the biggest barriers to implementing program at UTMC?

The budget is the largest concern. The staff is always interested and willing to participate in programming.

5. Do you think that there are unmet programming needs that you might be able to consider?

There are always unmet programming needs. It would be best to have patients complete a survey to find what type of programming is lacking and then determine which programming would be beneficial for the facility.

6. Do you think individuals would be willing to participate in a health and wellness program?

Yes.

7. Do you think the staff and administrators here at UTMC would be supportive of this type of program?

Absolutely, if funding is available to support and implement the program.

8. What are funding sources for current programs at UTMC?

- Grants
- State vocational resource agency
- UT Foundation

Appendix C

Interview Two & Three with Stakeholders

Interview at The University of Toledo Medical Center – Outpatient Rehabilitation

Site: Outpatient Rehabilitation at The University of Toledo Medical Center, Toledo, Ohio

Interviewee: Mary Breymaier, PT; Ashley Bilek, PTA

Introduction

- Find a quiet place for interview
- Introduce myself, assignment, and needs assessment
- Obtain permission to take notes
- Statement of confidentiality—will be using name in paper write-up for my course
- Are they familiar with OT? Explain what OT is and the services we can provide
 - Ms. Breymaier and Bilek were familiar with occupational therapy. Therefore, a review of the term occupation and occupational therapy were discussed. Occupation was described as doing something with meaning and purpose. This includes working with individuals to promote health and enhance function. Occupational therapists work in a variety of settings including schools, rehabilitation facilities, and in the home.

Purpose of Interview

To discuss current programming needs in Outpatient Rehabilitation at The University of Toledo Medical Center (UTMC)

Interview Questions

9. In what capacity do you work with the clients and families in Outpatient Rehabilitation at UTMC?

Mary: I am a Physical Therapist in Outpatient Rehabilitation at UTMC. I attend prosthetic clinic monthly, I am a resource for other staff members, and I teach prosthetics to the physical therapy students.

Ashley: I am a Physical Therapy Assistant that works with lower extremity amputations to learn skills for walking and using stairs. I also work with individuals for pre-prosthetic training to help prevent contractures and help strengthen the lower extremity. Finally, I educate family members on walking, stretching, and strengthening techniques.

10. What are some of the demographics of the population served at Outpatient Rehabilitation at UTMC (e.g. age, abilities, etc.)?

Mary: Most individuals are elderly patients that have had an amputation due to dysvascular concerns. There are some young patients with traumatic amputations. I have only seen 2-3 pediatric patients in 34 years. Individuals with amputations as a result of tumors are rare. However, when these patients do come to UTMC, they have usually has

a hip disarticulation. Finally, individuals that had their amputation at a young age are also seen due to developing problems with the prosthetic device.

Ashley: The majority of patients with amputations are elderly or 60+ years of age.

11. What is the most common cause for amputations at UTMC?

Mary: The most common cause for amputations are dysvascular concerns in elderly patients.

Ashley: The most common cause for amputations are diabetic issues, however, individuals with amputations due to trauma are also seen.

12. What are the major concerns for individuals that are patients at UTMC?

Mary: The biggest concern for individuals with amputations is to be able to walk again in order to get back to work and to be able to complete leisure tasks.

Ashley: The majority of individuals with amputations have gotten into this position because they have not taken care of themselves. As a result, a major concern of being a PTA is to educate patients about taking care of themselves by completing skin checks of bilateral extremities and educating individuals about properly following the wearing schedule of the prosthetic device. The major concern for the patient is to become a functional ambulator in order to perform their daily routine.

13. What are the biggest barriers for individuals with amputations?

Mary: The biggest barriers are strength and balance concerns. However, prosthesis fit due to volume changes and skin breakdown are also large concerns. It is also important to protect the good extremity.

Ashley: The biggest barrier is motivation and not wanting to exercise. Furthermore, patients often do not listen to recommendations made by their therapist. Finally, being functional is a large barrier for individuals with amputations.

14. Do you think that there are unmet programming needs that your might be able to consider?

Mary: The biggest concern is after discharge from therapy. Many individuals either discontinue what they have learned in therapy or they have difficulty getting back into leisure activities. Programming to motivate individuals to continue what they learned in therapy and also techniques to help them get back into leisure activities would be beneficial.

Ashley: Yes. Individuals need a space where there is a structured environment and encouragement in order to complete physical activity to keep them active once therapy has been completed.

15. Do you think individuals would be willing to participate in a health and wellness program? Do you think individuals with newer amputations would be more willing to participate in a program?

Mary: Yes, individuals are usually eager to stay active after therapy. Individuals are constantly looking for resources in order to stay active and maintain what they learned during therapy. Individuals are also looking for a support and a way to network, so participating in programming would be beneficial.

Ashley: A large majority of individuals would participate due to the structure and encouragement that is provided by a program. Both individuals with new and older amputations would be willing to participate because it gets them out of the house and allows them to tell their story to individuals going through the same life experiences.

16. Do you think the staff and administrators here at UTMC would be supportive of this type of program?

Mary: Staff and administrators would be supportive of providing space and possibly equipment. However, funding would be a barrier and not possible at this point in time.

Ashley: Staff and administrators would be supportive based on the type of funding that is required for the program.

17. Are there any community resources that are beneficial for individuals with amputations?

Mary: The YMCA provides opportunities for continued fitness. Prosthetic clinic provides ongoing follow-up with the doctor, prosthetist, and physical therapist. Central Park West has programs for all types of patients and has opportunities for individuals to complete aquatic programs. Central Park West is a great resource for those individuals that have to quit therapy as a result of Medicare restrictions. The Ability Center provides help with ramping and also allows individuals to volunteer and get involved in the community. Finally, vocational counseling and social work are also important resources for individuals with amputations.

18. I have been researching journal articles and books for more information about amputations, health, and wellness. Are there any resources that you think would be beneficial to review on this topic of amputations, health, and wellness?

Mary: The First Step magazine has large amounts of information and education materials for individuals with amputations. There is also new research about mirror therapy to help individuals with phantom pain.

Ashley: APTA website

Appendix D

Survey for Potential Participants

10. Are you employed?

Yes

No

11. Is your work routine altered due to your amputation(s)? Please explain.

12. Is your work routine altered due to your health (pain, fatigue, endurance)? Please explain.

13. Please describe any daily tasks that are difficult to perform due to your amputation(s)? (e.g. eating, bathing, grooming/hygiene, dressing, household management).

14. Why do you consider the above tasks difficult to perform?

15. Are there any leisure or social tasks which are difficult to perform due to your amputation?

16. Why do you consider the above tasks difficult to perform?

17. What is (are) your major concern(s) with living with an amputation?

18. What is (are) the biggest barrier(s) for living with an amputation?

19. In general, would you say your health is:

Excellent

Very good

Good

Fair

Poor

20. Please describe any daily tasks that are difficult to perform due to decreased endurance and strength. (e.g. bathing, dressing, eating, household management, leisure activities)

21. Would you be willing to participate in a health and wellness program designed for individuals with amputations?

Yes

No

22. If you answered no to the above question, why would you not want to participate?

23. What days and times would best fit your schedule? (Please mark all that apply.)

Monday

Tuesday

Wednesday

Thursday

Friday

Saturday

Sunday

Morning

Afternoon

Evening

Please provide any additional thoughts and comments:

Thank you for completing this survey. My goal is to create a program for individuals with amputations that would focus on health and wellness which includes facts about nutrition, skin checks, phantom pains, energy conservation techniques, fitness techniques beyond those learned during therapy. Your responses will help me to determine if there is a need for a program for individuals with amputations and which topics to include in the program.

Appendix E
Program Flyer

Do you have an amputation?

**Attend an 8-week program to improve quality
of life for individuals with limb loss!**

Topics Discussed:



- **Physical Activity**
- **Diet Modification**
- **Energy Conservation**
- **Driving**
- **Limb Hygiene**
- **Phantom Limb Pain**
- **Skin Desensitization**
- **Leisure Participation**

Wednesday 6:00 PM – 7:30 PM

**University of Toledo Outpatient
Rehabilitation Clinic**

**To sign up or for more information please call
419.530.5040**

Appendix F

Participant Recruitment Script

Participant Recruitment Script

Thank you for taking the time to recruit participants for the program Improving Quality of Life for Individuals with Limb Loss! Below there is a list of topics to be covered when recruiting participants.

- Why attend the program, Improving Quality of Life for Individuals with Limb Loss, at UTMC Outpatient Rehabilitation?
 - The instructor of the program is an occupational therapist. Therefore, the program is occupation-based. Occupation-based programs focus on tasks that are purposeful and meaningful to the participants in order to guarantee the participants have the capacity to maintain satisfying relationships, work, and play experiences.
 - The program uses hands-on techniques to ensure the participants are able to perform necessary tasks independently in their daily routine.
 - The goal of the program is to improve health-related quality of life by reducing further illness, disease, and injuries by promoting healthy living practices and providing skill development training.

- When is the program?
 - The program is on Wednesdays from 6:00 PM – 7:30 PM for eight weeks.

- What is the cost of the program?
 - There is no cost for the program at this time.

- What topics are covered in the program?
 - The main topics of the program are listed below. However, if there is a topic the participants would like to cover, the program can be altered in order to meet the needs of the participants.
 - Physical Activity
 - Diet Modification
 - Energy Conservation
 - Driving
 - Limb Hygiene
 - Phantom Limb Pain
 - Skin Desensitization
 - Leisure Participation

- How many openings are available in the program?
 - At this time, there are only 10 available openings in the program. The spots are first come, first serve.

- How can participants sign up?
 - Participants can sign up at the reception desk at UTMC Outpatient Rehabilitation Clinic.

Appendix G

Physician Clearance Form

Physician Clearance Form

Please have this form completed by your physician prior to attending the program Improving Quality of Life for Individuals with Limb Loss.

Participant Name _____

D.O.B. _____ **Age** _____

Level and Location of Amputation(s)

Date of Amputation(s)

BP _____

HR _____

Past Medical History

Is this individual, named above, medically able to participate in a health and wellness program specialized for individuals with amputations? YES _____ NO _____

Physician Name (Printed)

Physician Signature

Date

Physician Contact Information:

Appendix H
Demographic Form

Demographic Form

Participant Name _____

1. D.O.B. _____ **Age** _____

2. Gender Male Female

3. Level and Location of Amputation(s)

4. Date of Amputation(s)

5. Name of Prosthetist

6. Please list medications you are currently taking.

7. BP _____

HR _____

8. Are you diabetic?

Yes

No

9. Do you use equipment to complete your daily routine?

Wheelchair

Walker

Cane

Crutches

10. Are you able to drive?

Yes

No

11. Do you have any allergies (including food)? If yes, please explain.

12. How many days per week do you exercise?

0

1

2

3

4

5 or more

13. What types of exercise do you do?

Walk/Jog

Swim

Aerobic Classes

Strength training

Yoga/Stretching

Other

14. Do you read food labels to help you make food choices?

Yes

No

15. Emergency Contact

Name:

Phone Number:

Appendix I

Assessment Record Sheet

Assessment Record Sheet

Participant Name _____

Please Circle One:

Pre-Test

Post-Test

2 Month Follow-Up

- **Chair Stand Test**

Number of Stands in 30 seconds = _____

- **Six Minute Walk Test**

Distance Walked in Six Minutes = _____

- **Borg Scale**

Perceived Exertion after Six Minute Walk = _____

Appendix J

Pre-Test/Post-Tests Score Sheet

Pre-Test/Post-Test Score Sheet

Assessment	Pre-Test Score	Post-Score	2-Month Follow-Up
Chair Stand Test			
SF-12v2 Health Related Quality of Life			
Amputee Mobility Predictor (AMP)			
Amputee Activity Sheet (AAS)			
Six Minute Walk Test			
Borg Scale			

Appendix K
Phases of Recovery

Phases of Recovery

The Recovery Process The Amputee Coalition uses six phases to describe the recovery process of amputation.		
PHASE	CHARACTERISTIC	DESCRIPTION
Enduring	Surviving amputation surgery and the pain that follows	Hanging on; focusing on present to get through the pain; blocking out distress about future - it is a conscious choice not to deal with the full meaning of the loss; self-protection
Suffering	Questioning: Why me? How will I...?	Intense feelings about the loss: fear, denial, anger, depression; vulnerable and confused; return to Enduring stage; emotional anguish about the loss of self adds to the pain
Reckoning	Becoming aware of the new reality	Coming to terms with the extent of the loss; accepting what is left after the loss; implications of the loss for future - how will roles change; ongoing process; minimizing own losses in comparison to others' losses
Reconciling	Putting the loss in perspective	Regaining control; increased awareness of one's strengths and uniqueness; more assertive; taking control of one's life; self-management of illness and recovery; changed body image; need for intimacy
Normalizing	Reordering priorities	Bringing balance to one's life; establishing and maintaining new routines; once again, doing the things that matter; allowing priorities other than the loss to dominate; advocating for self
Thriving	Living life to the fullest	Being more than before; trusting self and others; confidence; being a role model to others; this level of recovery is not attained by everyone

Appendix L

Position Description – Occupational Therapist

Position Description – Occupational Therapist

Position Title: Occupational Therapist, Program Coordinator

Reports to: Rehabilitation Director of Outpatient Rehabilitation at University of Toledo Medical Center (UTMC)

Position Summary: The occupational therapist will direct and implement a program to improve quality of life for individuals with limb loss at UTMC Outpatient Rehabilitation in Toledo, Ohio. He or she will organize the occupation-based program for individuals with amputations. The program is once a week for eight weeks, three times per year. The position requires approximately ten hours per week. Annual salary = \$18,850

Professional Qualifications:

- Licensed in the State of Ohio
- Registered by the National Board of Certification in Occupational Therapy
- Minimum of a Bachelor's degree in occupational therapy
- Preferred experience in community-based setting

Duties and Responsibilities:

- Recruit participants and volunteers
- Administer the Self-Identified Goals Assessment, SF-12v2, Amputee Mobility Predictor, Amputee Activity Survey
- Plan and conduct in-service for volunteers
- Review participant demographic information
- Plan and organize weekly class session
- Create relevant worksheets and handouts
- Conduct weekly sessions
- Supervise volunteers
- Perform other duties as needed

Skill and Specifications:

- Effective teaching skills
- Effective interpersonal and communication skills
- Effective supervisory skills
- Attention to detail
- Strong organizational skills
- Ability to work independently

Physical Capabilities: Must use proper body mechanics and be able to stand for long periods of time.

Appendix M

Job Advertisement Flyer

**The University of Toledo Medical Center is
currently seeking a**

**Part – Time
Occupational Therapist**

**to direct a community-based program to improve
the quality of life of individuals with amputations**

Responsibilities

- ∞ **Work 10 hours/week**
- ∞ **Recruitment**
- ∞ **Assessment administration**
- ∞ **Intervention implementation**
- ∞ **Supervision of volunteers**

Qualifications

- ∞ **Registered by NBCOT**
- ∞ **Licensed in the State of Ohio**
- ∞ **Experience in community-based setting**

Annual Salary = \$18,850

Send resume to:

**The University of Toledo Medical Center
1125 Hospital Drive, Mail Stop #1100
Toledo, OH 43614**

Appendix N

Budget

Budget

Personnel				
Position	Hours per week	Wage	Fringe Benefits	Total
Program Occupational Therapist	10	\$36.25	—	\$18,850
Subtotal:				\$18,850

Program Supplies and Equipment				
Item	Item Description	Quantity	Cost per Item	Total Cost
User's Manual for the SF-12v2 Health Survey, Second Edition	PDF Version Item# EM122	1	\$ 150.00	\$ 150.00
SF-12v2 Health Survey: Administration Guide	PDF Version Item# EM038	1	\$ 30.00	\$ 30.00
Quick Start Guide for the SF-12v2 Health Survey	PDF Version Item #EM086	1	\$ 12.00	\$ 12.00
Health Outcome Scoring Software	PDF Version Item #EM119	1	\$ 12.00	\$ 12.00
Premium Yoga Mat	68"L x 24"W x 1/4" Item #242076	15	\$ 19.95	\$ 299.25
Power Systems Power Med-ball	2 lb - Yellow Item #262556	5	\$ 25.95	\$ 129.75
Power Systems Power Med-ball	4 lb - Green Item #262557	5	\$ 30.95	\$ 154.75
Power Systems Power Med-ball	6 lb - Blue Item #262558	5	\$ 39.95	\$ 199.75
Power Systems Power Med-ball	8 lb - Orange Item #262559	5	\$ 47.95	\$ 239.75
Power Systems Power Med-ball	10 lb - Red Item #262560	5	\$ 55.95	\$ 279.75
Power Systems Power Med-ball	12 lb - Purple Item #262560	5	\$ 64.95	\$ 324.75

Item	Item Description	Quantity	Cost per Item	Total Cost
Secure Medicine Ball Cart	45"L x 27"W x 31" H Storage of medicine balls & other equipment, swing top, easy-rolling Item #262608	1	\$ 398.95	\$ 398.95
Understanding Food Label Brochure	25 pack Item # 710310	2	\$ 13.00	\$ 26450.00
Over the Door Mirror	0.75" H x 15.5" W x 51.51 D Item # 13589442	5	\$ 24.99	\$ 124.95
Member's Mark Purified Water	40 Pack, 16.9 oz Item # 561914	9	\$ 3.98	\$ 35.82
Quaker Chewy Granola Bars Variety Pack	48 count Item #938015	6	\$ 8.59	\$ 51.54
Jolly Ranchers Hard Candy	5 lb bag Item #228948	1	\$ 10.48	\$ 10.48
Food	Variety of food to be determined for diet modification occupation	---	---	\$ 450.00
Subtotal:				\$ 2,929.49

Grand Total (Personnel/Supplies and Equipment): [To be requested]	\$ 21,779.49
--	--------------

In-Kind Contributions				
Computer	---	---	---	---
Bathrooms	---	---	---	---
Electric/Heat	---	---	---	---
Footstool	---	---	---	---
Disinfectant	---	---	---	---
Theraband	---	---	---	---
Office Supplies	---	---	---	---
Chairs	---	---	---	---
In-Kind Contributions:				\$ 6,000.00

Overall Grand Total (Personnel/Supplies & Equipment/In-Kind):	\$ 27,779.49
--	--------------

Grand Total (Personnel/Supplies & Equipment/In-Kind): [To be requested]	\$ 21,779.49
--	--------------

Appendix O
Attendance Sheet

Appendix P
Program Evaluation

Program Evaluation

Please complete the following questions and return to (occupational therapy practitioner's name).

- 1. On a scale of 1 to 5, is the program to improve quality of life for individuals with amputations meeting your expectations?**

1	2	3	4	5
Not meeting expectations		Neutral		Meeting expectations

Please explain your answer to the above question in the space provided.

- 2. What are the strengths of the program?**

- 3. What are the weaknesses of the program?**

- 4. What could be changed to improve the program?**

Appendix V

Timeline

Timeline

Task																					
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Recruitment of participants	X	X	X	X	X									X							
Purchase office supplies	X																				
Purchase exercise equipment	X																				
Schedule facility	X																				
Recruitment of volunteers	X	X	X	X																	
In-service					X																
Complete initial assessment of participants						X															
Implement and conduct weekly session						X	X	X	X	X	X	X	X								
Complete process evaluation						X	X	X	X	X	X	X	X								
Complete formative evaluation									X												
Complete summative evaluation													X								
Complete final assessments of participants													X								
Schedule two month follow-up																			X	X	
Complete two month follow-up																					X

Note: The program will cycle three times throughout the year. During week 14, recruitment for the second session will begin which will start the second cycle of the program.

Appendix R
Letter of Support



April 19, 2013

Dear Sir or Madam:

I am writing to provide a letter of support to Lisa Nutting, an Occupational Therapy Doctorate student at The University of Toledo. Through Ms. Nutting's observation at The University of Toledo Medical Center Outpatient Rehabilitation in Toledo, Ohio, she has experienced first-hand the needs for individuals with amputations.

The major cause of amputation is the result of vascular complications such as diabetes. Approximately ten percent of individuals residing in Lucas County cope with diabetes daily. The burden of coping with diabetes and amputations on individuals and families can be reduced by achieving and maintaining a healthy body weight, participating in physical activity, and maintaining a healthy diet. Many individuals that experience amputations are unable to live life to the fullest. As a result, it is necessary to take steps in order to ensure individuals with amputations are able to maintain a high quality of life.

In addition to diabetes and amputations having a significant impact on individuals and families, amputations also have a large impact on health systems. Annually, hospital costs related to amputations totaled more than 8.3 billion dollars. By supporting a preventative health and wellness program for individuals with amputations, health care costs have the potential to be reduced.

The program to improve quality of life for individuals with amputations will ensure individuals in the Toledo area receive education and training to create a strong foundation for an overall healthy lifestyle, prevent future amputations, and increased health-related quality of life.

The University of Toledo Medical Center Outpatient Rehabilitation supports the program to improve quality of life for individuals with amputation because we find value in assisting patients in coping with their disability. The program will encourage the participants to achieve their fullest potential throughout their lives.

I hope you recognize the value of this program. Thank you in advance for your consideration.

Please contact me with any questions you may have.

Sincerely,

Rehabilitation Practitioner