

Use of Therapeutic Tricycles to Increase Activity in an Underserved Population: Description of An AmTryke® Demonstration Project

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The purpose of this article is to describe an AmTryke® demonstration program and discuss how this program provides alternative therapeutic exercise opportunities in an underserved population. An AmTryke® is a therapeutic tricycle which is fitted specifically for individuals with special needs who cannot ride a traditional bicycle. An AmTryke® demonstration site was established in a five county area of east central Alabama to provide therapeutic tricycles for pediatric patients to utilize as part of their home based exercise program. Many pediatric rehabilitation clients have limitations associated with access to therapeutic exercise opportunities due to a number of issues including medical insurance, access to services, and transportation complications. A home based exercise program which utilizes therapeutic tricycles is one approach which addresses these concerns. An assessment at the end of the first fiscal year of an AmTrykes® demonstration program indicate that the program had been successful in providing access to therapeutic exercise for this underserved population.

Introduction

This article will describe how a community service organization has been utilized in a region of Alabama to provide therapeutic tricycles for individuals with special needs. Utilization of community resources to provide therapeutic tricycles for home-based exercise will be described in terms of organization, obtaining funding and networking. Outcome data were obtained from survey questionnaires completed by the guardians or recipients of AmTrykes® provided by this program. Factors surveyed included whether or not the tricycle was being utilized for increased activity for the recipient; barriers to use if it was not being utilized; any increase in activity for the recipient's family. The results of the survey indicated the therapeutic tricycles were being utilized by the recipients as part of a home exercise program. The utilization of the AmTrykes® validates the use of resources for this project.

Access to occupational therapy and physical therapy services can be complicated by many factors. These factors include limitations of medical insurance, the limited availability of services, and transportation difficulties. The Montgomery River Region area in east central Alabama is a five county area consisting of Autauga, Elmore, Lowndes, Macon and Montgomery Counties. Montgomery, Macon and Lowndes Counties are in the Black Belt region of the state.

Insurance coverage is an important factor in receiving physical therapy and occupational therapy. Individuals without insurance have limited access to therapeutic services. According to "Income, Poverty, and Health Insurance coverage in the United States: 2007" (2008); in the United States 15.3% of the population was without medical insurance coverage. The Hispanic population demonstrated the highest percent of uninsured at 32.4%; followed by the Black population at 19.9%; the Asian population at 16.9% and the Non-Hispanic white population at 10.4%. Overall, 11% of children were reported to be without insurance coverage. The "Community Counts Report" (2006) reported that 11.2% of Alabamians

were uninsured. In the River Region counties, the rate of uninsured individuals was reported as Autauga (8.1%); Montgomery (9.3%); Elmore (10%); Lowndes (13%); and Macon (14.3%).

In Alabama, 19.3% of the population was Medicaid eligible in 2008 (Alabama Medicaid Annual Report, 2008). In the River Region, Lowndes County has the highest percentage population eligible for Medicaid at 27.8% followed by Macon at 25.3%; Montgomery at 22.5%; Autauga at 15.2%; and Elmore at 14.4% (Alabama Medicaid Annual Report, 2008). Medicaid recipients in Alabama are limited to outpatient therapy services provided through hospital based outpatient departments. In the River Region area, Lowndes and Macon Counties have no available hospital services. Elmore County has two community hospitals which do not provide outpatient therapy services, and Autauga has one hospital which does not provide outpatient therapy services. Montgomery County has three hospitals ("Community Counts Report" 2006). Only two of these hospitals provide outpatient therapy services, and only one provides pediatric services. Therefore, pediatric therapy patients receiving Medicaid have access to only one facility in the five county region. The lack of access to services often places a burden of extra travel time and transportation costs on the individuals and their caregivers.

Transportation itself can pose a problem for individuals traveling for therapy services. According to the 2000 Census (US Census Bureau, 2000) 8.3% of households in Alabama were without a vehicle. In the River Region area, Macon County had the highest percentage of households without a vehicle at 18.8%; followed by Lowndes at 15.1%; Montgomery at 9.8%; Autauga at 5.2%; and Elmore at 4.1%.

Medical appointments, surgeries, and sibling concerns are also issues which impact access to therapy services. These factors contribute to the development of an underserved population for therapeutic services. Establishment of a home exercise program, which is accessible and promotes compliance, is one way that physical and occupational therapists may address this issue. Therapeutic tricycles are a means of providing alternative therapeutic exercise opportunities for an underserved population.

AmTryke®/AMBUCS

AmTrykes® (see figures 1 & 2) are therapeutic tricycles specifically fitted for individuals with special needs or who are otherwise unable to operate a traditional bicycle. They are fitted for each individual by physical or occupational therapists at demonstration sites. These tricycles can be purchased directly by individuals. Alternatively, they may be provided through AMBUCS (American Business Clubs), a national non-profit service organization dedicated to creating mobility and independence for people with special needs (National AMBUCS 2009). The mission is promoted through the AmBility Program which is focused on two areas, equipment and processes. The "cornerstone" of the AmBility program is the AmTryke® Project which was adopted in 1994 as a national project by AMBUCS. Though this project over 9,400 AmTryke® tricycles have been distributed worldwide to individuals who are unable to operate a traditional bicycle. Most of the AmTrykes® are provided through AMBUCS organizations and given free of charge to individuals with special needs (National AMBUCS, 2009).

These therapeutic tricycles may be adapted in a variety of ways. All the AmTrykes® may be fitted with a push/pull bar for assistance with propulsion and steering. With some models, hand cranks may be utilized if the individual is unable to use their lower extremities to propel the AmTrye®. However, utilization of the hand crank allows the individual to use the lower extremities as much as possible to develop strength and range of motion. The hand crank may also be utilized as a means of developing upper extremity strength and range of motion. The use of a hand crank may also assist in developing overall endurance. In a clinical trial of individuals with tetraplegia, physical capacity measures of patients

were significantly improved after implementing a structured exercise program utilizing hand cycles (Valent, et. al 2009). Therapeutic tricycles provide gateways to exercise for individuals who are often otherwise limited in their opportunities for therapeutic recreational activity. They provide many remedial benefits including improving motor skills, strength development, and cardiovascular activity. Moreover, they help to build self-esteem and are a fun approach to a home exercise program. Many pediatric patients have difficulty making therapy appointments due to lack of transportation, family time constraints, other health issues, and access due to insurance limitations. These therapeutic tricycles provide meaningful exercise for the individual during therapy sessions, but more importantly, they are useful in sustaining a compliant home exercise program when formal therapy is limited.

Demonstration Site

AmTryke® Demonstration Sites are located at a facilities that provide locations for individuals to be fitted for an AmTryke® by an occupational or physical therapist (National AMBUCS, 2009). The facility is usually a hospital, clinic or school and the various models of AmTrykes®, often provided by a grant, are available to be used for fitting individuals for their own AmTryke®. The Demonstration Site in the Montgomery River Region was funded by a grant submitted to a local hospital foundation. Staff members at the Demonstration Site were trained to fit individuals for individualized AmTrykes®. Candidates having the potential of benefiting from an AmTryke® were identified by local physical and occupational therapists.. These were individuals that had the potential to benefit from the range of motion, strengthening and endurance that a traditional tricycle/bicycle would provide but were unable to utilize a traditional tricycle due to their physical limitations. After the appropriate applications were completed, the individuals were fitted for AmTryke® models appropriate to their age and needs. Due to the large number of applications that were submitted a list was soon established for those individuals awaiting AmTrykes®.

The AmTryke® Demonstration Site provided an opportunity to identify and fit individuals for therapeutic tricycles but it soon became evident that a means to finance the tricycles was needed. Employees of the Therapy Center of the hospital hosting the site chartered a local chapter of AMBUCS in October 2008 in order to raise funds as a 501c3 organization. This AMBUCS chapter provided an avenue to provide AmTrykes® for individuals in the five county area surrounding Montgomery, Alabama. The nine charter members of the Board of Directors were all employees of the Therapy Center.

Resources

The resources and information needed for chartering a local AMBUCS chapter and developing a demonstration site were readily available on the AMBUCS web site (National AMBUCS, 2009). Application forms, liability waivers and agreement forms were available for adoption and use by the local chapter. The forms included an agreement for the recipient to "recycle" the AmTryke® back to the AMBUCS chapter. The recycle program allows an AmTryke® to be refurbished and given to another individual if the original recipient outgrows it or is no longer able to use it.

Suggestions were also presented on the AMBUCS web site for budget items and fundraising. Funding for the local chapter fell in two categories: operating expenses and funding for purchasing AmTrykes®. Operating expenses included liability insurance, accountant fees, supplies for mailings and presentations. The AmTrykes® vary in cost from approximately \$280 for a small tricycle without adaptation, to approximately \$700 for a larger tricycle with trunk and head support.

The National AMBUCS organization provided 10 matching AmTrykes® and another chapter in Alabama provided startup matching funds to assist with the establishment of the River Region Chapter. Operating expenses for the local chapter were financed through fundraising activities and AmTrykes® were purchased through donations from individuals and small grants. Donations were provided by individuals, church groups, civic groups, and businesses and grant funds were obtained from business foundations and other nonprofit foundations. A local printing company provided a delivery site for receiving shipments of the AmTrykes® and for their storage after delivery. The printing company also donated printed material including pancake breakfast tickets and brochures. A local web site design company provided the web-site design hosting and upkeep. A number of civic organizations allowed for displays at their state and regional meetings. The local municipal Therapeutic Recreation Center provided facilities for events including AmTryke® presentations and a bike rodeo. A local motorcycle hobby group provided volunteers for fundraising events.

A workshop to introduce area physical therapists, occupational therapists and physical therapy students to the AmTryke® was a collaborative effort between the National AMBUCS organization, the local AMBUCS chapter and the Demonstration Site. The workshop increased awareness of the program and trained additional physical and occupational therapists to provide AmTryke® fittings for area individuals. Local media covered these events to provide publicity and credibility for the new organization. The publicity served to increase public awareness of the group as a mechanism to increase donations as well as serving as an avenue of identifying more individuals in the area that might benefit from the therapeutic tricycles. Typically, applications for AmTrykes® increased after each case of television or newspaper publicity.

First Fiscal Year Review

Montgomery River Region AMBUCS was chartered in October 2008 with the first AmTryke® presentations at an open house December 2008. The first fiscal year ended May 2009. During the first 6 month period, over \$23,000 was raised and 46 AmTrykes® were presented to individuals and one to the municipal Therapeutic Recreation Center. The ages of the individuals ranged from 22 months to 49. The majority of the AmTrykes® (63%) have been given to individuals in the 5 and under age group (refer to Figure 3 for the breakdown by percentage of individuals in each age group). Individuals with 18 different medical diagnoses have benefited from the program. Some individuals have multiple diagnoses. Individuals with Cerebral Palsy have received 61 % of the AmTrykes® presented. A survey was sent to 44 of the 46 individuals that received AmTrykes®. Changes in contact information prevented the participation of two individuals. The individual or guardian, if the individual was a minor, was asked to complete the questionnaire. The return rate was 66% (29/44).

Preliminary results of the survey provided information about use of the AmTrykes®, identified factors which hindered use, indicated any increases in activity for the individual and family, and ascertained their level of overall satisfaction with the AmTryke®. All of the respondents reported using the AmTrykes® some each week. The majority of the respondents (51.7%) reported utilizing the AmTryke® 1 - 3 hours per week. Two individuals (6.8%) reported utilizing the AmTrykes® 14-18 hours per week and two individuals (6.8%) reported using the AmTryke less than one hour per week.

Respondents were asked to identify factors which limited the use of the AmTryke®. Weather conditions were cited as the primary cause which hindered use of the Amtryke®. The surveys were sent out in July when the hot, humid weather in Alabama sometimes makes it difficult to participate in outdoor activities. The next factor cited, by respondents for limiting use was time.

In response to the question: "Has the AmTryke® provided an opportunity for the recipient to exercise more often?" 96.5% responded yes. In response to the question of increased recreational opportunities for the family, 93% responded yes. All of the respondents reported being very satisfied (85.5%) or satisfied (14%) with the AmTryke®.

The initial survey results have provided information from the recipients' prospective as the local chapter also reviewed the first 6 months since chartering the River Region chapter. The initial goals set by the chapter for the first year were to train staff to perform fittings for individuals, and raise funds to present 25 AmTrykes®. The initial goals were surpassed as 47 AmTrykes® were presented during the six month period. Having the Demonstration Site at the hospital Therapy Center has benefited the facility by adding additional equipment for use with clients during therapy sessions. The Demonstration Site was also highlighted in new marketing strategies for the hospital Rehabilitation Department where the Demonstration Site is located.

The AMBUCS chapter formed alliances with other community service organizations which contributed to the continued growth of the project. A relationship was formed with the Physical Therapy student organization at Alabama State University, with many of the students attending the training workshop that was offered for area physical and occupational therapists. The student organization also sponsored an AmTryke® for a child as part of a service learning project.

An area of growth for the local AMBUCS chapter will involve developing partnerships for building wheelchair ramps in the community. Areas which need to be addressed include adopting more streamlined approaches to delivery and assembly of the AmTrykes®, improved grant writing and the development of the recycling program as children begin to outgrow their current AmTryke®.

Conclusion

The AmTryke Demonstration project serves as an example that even during a time of economic downturn, community resources are available to assist an underserved population. The initial survey results indicated that the AmTykes® were being utilized as part of a therapeutic home exercise program to increase activity for the individuals who received them. The family members reported increased activity for the individual with the benefit of increased recreational activities also cited for the family. The project has not only been successful in providing exercise opportunities for recipients, it has been very rewarding for the members of the organization. Information for chartering a new chapter is available at the AMBUCS website and the AMBUCS resource center is very helpful. Funding is vital in providing the AmTrykes®. Local corporations, banks, churches and civic groups were very responsive in assisting with providing funds and support. Chapter members speak and present AmTrykes® at civic meetings, church groups and community functions. The initial experience of the AmTryke® Demonstration project suggests that it might be beneficial for others wishing to duplicate this program to consider establishing a local AMBUCS chapter prior to initiating a Demonstration Site.

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