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## Older Adults' Perspective: Exploring the Experience of Owning a Guide Dog

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Older Adults' Perspective: Exploring the Experience of Owning a Guide Dog

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A culminating capstone project report submitted to the faculty of Dominican University of California in partial fulfillment of the requirements for the degree of Master of Science in Occupational Therapy

San Rafael, California

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This capstone project paper, written under the direction of the candidate's capstone advisor and approved by the department chair, has been presented to and accepted by the Department of Occupational Therapy in partial fulfillment of the requirements for the degree of Master of Science in Occupational Therapy. The content and research methodologies presented in this work represent the work of the candidate alone.

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## Abstract

Guide dogs have been shown to be an effective assistive device that can help older adults with low vision navigate their community and improve overall well-being. Despite vast research conducted on pet therapy and dog companionship, limited research exists on the facilitators and barriers of owning a dog guide among older adults with low vision. The purpose of this qualitative phenomenological study is to explore the facilitators and barriers of owning a guide dog as experienced by older adults with low vision participating in Guide Dogs for the Blind (GDB) organization. Data were gathered among seven participants using semi-structured phone interviews and themes were extracted. Five themes emerged using constant comparison methods: changes in habits and routines, being a dog guide owner, increase in community integration, human-dog guide bonding, and guide dog enhances autonomy.

Several facilitators for using a guide dog as an assistive device were identified. Participants' increased confidence from using their guide dog contributed to further engagement in unfamiliar environments, thus improving self-esteem, freedom, and autonomy. Themes revealed that using a guide dog for the first time required adjustments in daily habits and routines to fit the guide dog's lifestyle. Additionally, these changes led to increased feelings of independence and freedom, enhancing the participant's autonomy. Moreover, participants felt calmer and safer with the guide dogs resulting in a reciprocal bond with their guide dogs. Study results provide health practitioners, such as occupational therapists (OTs), insight to how guide dogs may affect the daily living patterns and quality of life of older adults with low vision. Additionally, study results provide insight for GDB and OTs into improving support and training processes.

## Introduction

Low vision is an age-related condition in which vision cannot be further improved by surgery, glasses, or contact lenses (Centers for Diseases Control and Prevention [CDC], 2015; National Eye Institute [NEI], 2016). Low vision mainly affects older adults over the age of 55 years old (The Vision Council, 2015). Due to the growing population of older adults, more individuals will be at risk for age-related visual impairments, resulting in possible challenges of completing daily activities independently (World Health Organization, 2017). Thus, low vision can make older adults more dependent on their caregivers and assistive devices to carry out their daily activities, including activities of daily living (ADLs) and instrumental activities of daily living (IADLs) such as community mobility (Blaylock, Barstow, Vogtle, & Bennett, 2015).

Many assistive devices such as long canes or guide dogs may help promote independence in older adults with low vision. Despite the accessibility of long canes, which is a more traditional assistive device, long canes can be abandoned over time due to lack of proper training or inconvenience (Hersh, 2013; Whitmarsh, 2005). To maintain independence in community mobility, an alternative solution is to obtain a guide dog from organizations such as Guide Dogs for the Blind (GDB). Guide dogs have been shown to be effective an assistive device that can help older adults with low vision navigate their community (Whitmarsh, 2005; Wiggett-Barnard & Steel, 2008). As the population of older adults with low vision increases, it is important to address the challenges they may encounter and how changes in vision can affect participation in occupations such as community mobility (The Vision Council, 2015). Despite vast research conducted on pet therapy and dog companionship, there is limited information on the facilitators and barriers of first-time guide dog owners among older adults with low vision.

Understanding the facilitators and barriers of using a guide dog provides important insight on the guide dog-owner relationship as well as the dog's influences on various aspects of a person's life.

Occupational therapists often recommend appropriate assistive devices based on the client's preferences and needs. Identifying the facilitators and barriers of guide dog ownership is also beneficial in helping OTs to establish strategies for older adults with low vision to maintain participation in daily activities. Once these barriers are identified, interventions can be implemented to overcome the barriers and ultimately enhance older adults' experiences, while also addressing the issue of long cane abandonment. Moreover, OTs can further improve the quality of life for older adults with low vision by recommending guide dogs as assistive devices as opposed to traditional devices. Collaboration between OTs and GDB organization based on findings from the study can also provide an understanding of how to tailor GDB organization's training programs to identify and address possible barriers when obtaining and using a guide dog.

## **Literature Review**

### **Older Adults with Visual Impairment**

Visual impairment is a decrease in eyesight due to a reduction in perception, visual field and visual acuity, which cannot be corrected with glasses or contact lenses (NEI, 2016). Visual impairment encompasses a range of vision limitations from legal blindness to low vision (The Vision Council, 2015). According to NEI, "legal blindness is when vision sharpness is lower than or equal to 20/200 or visual field is below 20 degrees in diameter" (NEI, 2016). As for low vision, it is defined as "visual acuity that is 20/70 or poorer in the better-seeing eye and cannot be corrected or improved with eyeglasses" (The Vision Council, 2015). Other types of low vision conditions include partial sight blurred vision, blind spots, or tunnel vision (The Vision Council,

2015). Due to decreases in vision, the individual may have difficulty distinguishing fine details, which makes it challenging to complete everyday tasks.

Currently, low vision affects one in 28 Americans over the age of 40 years old (The Vision Council, 2015). Low vision can be caused by various conditions including age-related macular degeneration, diabetic retinopathy, glaucoma, cataracts, and retinitis pigmentosa (The Vision Council, 2015). One of the most common causes of low vision is macular degeneration, which affects 1,600,000 Americans aged 50 years and older (CDC, 2015). As life expectancy increases, vision loss amongst older adults is expected to continue to rise (Berger & Porell, 2008; Blaylock et al., 2015). Due to the growing population of older adults with low vision, addressing the many challenges older adults may face is important, including both psychosocial and occupational challenges (Berger, 2012; Blaylock et al., 2015; Christ et al., 2014; Cimarolli, Boerner, Brennan-Ing, Reinhardt, & Horowitz, 2012).

**Psychosocial impacts.** Psychosocial impacts in older adults who have low vision may include, but not limited to depression and loss of independence. Older adults with low vision who require more assistance with everyday tasks experience an increase in depressive symptoms (Blaylock et al., 2015; Christ et al., 2014). A two-year longitudinal study examined the challenges faced by 365 older adults with low vision over the age of 65 years (Cimarolli et al., 2012). Interviews were conducted at baseline, the first year and second year. The themes from the baseline interview revealed that older adults with low vision experienced negative thoughts of visual impairment, feelings of depression and sadness, and loss of independence. Baseline interview also indicated that older adults had thoughts about future problems related to low vision and concerns of worsening vision. Although older adults with low vision encountered a decrease in negative thoughts and concerns of worsening vision at the end of year one and two

follow-ups, they continued to experience psychological impacts of depression and sadness (Cimarolli et al., 2012).

Moreover, older adults with low vision who have chronic conditions may experience increased psychological effects. A qualitative study interviewed 148 older adults with low vision over the age of 57, who were also diagnosed with chronic conditions, such as rheumatoid arthritis and diabetes mellitus (Kempen, Ballemans, Ranchor, Rens, & Zijlstra, 2012). The study analyzed the psychological distress of older adults through interviews using the 14-item Hospital Anxiety and Depression Scale (HADS). Results revealed that older adults diagnosed with chronic conditions had a higher score in HADS, which indicated elevated levels of psychological stress. Due to the additional severe health conditions, older adults were more likely to have difficulty with everyday tasks, which may have contributed to increased levels of depression and anxiety compared to other older adults that did not have severe chronic health conditions in the study (Kempen et al., 2012). In addition to psychosocial impacts, many older adults with low vision also face numerous physical challenges in their environment that affect their occupational engagement.

**Occupational impacts.** Older adults with low vision experience many physical impacts during occupations in their home and community during daily activities. Berger and Porell (2008) conducted a two-year longitudinal study that collected data from 9,115 older adults with low vision over the age of 65 years old. Older adults were interviewed about the physical challenges they encountered while completing everyday tasks. The study revealed that occupations requiring more visual abilities such as meal preparation, shopping, and medication management were more difficult for the older adults to complete compared to other occupations

that rely less on vision (Berger & Porell, 2008). Therefore, low vision can also present additional challenges depending on the circumstances of the task.

Environmental challenges were also explored in a phenomenological qualitative study that interviewed 22 older adults between the ages of 55-80 years old to examine the effects of low vision on occupations (Blaylock et al., 2015). The study revealed completing everyday tasks were complex and closely dependent on the person's environment. For example, tasks such as self-feeding, grooming, and dressing were difficult when there were low illumination and poor color contrast. Without adequate light, older adults with low vision had more trouble identifying and locating items. In addition, among everyday tasks, meal preparation was one of the most difficult occupations that were identified. Older adults reported that it was challenging to know if meat was fully cooked because they could not see it properly. Furthermore, in the study, older adults reported that insufficient lighting limited their community mobility, which is defined as the ability to move around the community by walking, driving, or taking public transportation (American Occupational Therapy Association [AOTA], 2014). Hence, as visual impairment worsened, individuals relied on others and assistive devices to help complete everyday tasks (Blaylock et al., 2015).

Similar findings were found in another study by Rudman, Huot, Klinger, Leipert, and Spafford (2010), who conducted a descriptive phenomenological study that explored the experience of everyday activities among older adults with low vision. Thirty-four adults, 70-95 years old were interviewed with open-ended questions. The study revealed that many older adults could no longer continue their valued occupations such as sewing, playing pool, driving, reading, and feeding, all of which relied heavily on vision. In particular, the reading impairments had a profound impact on the performance in ADLs, such as feeding and IADLs. For example,

essential daily activities involving the use of personal computers, identifying medication prescription labels and food expiration dates all required the ability to read. Another finding revealed that older adults struggled to maintain their independence in functional mobility within their community due to fear of physical risks. This fear is cultivated from their inability to maintain constant vigilance of their surroundings because of their low vision. Hence, many older adults with low vision may be unwilling to go out into their community (Rudman et al., 2010). Therefore, to address some of the physical impacts on everyday activities, many older adults found assistive devices helpful to maximize functional performance (Horowitz, Brennan, Reinhardt, & Macmillan, 2006).

### **Low Vision Assistive Devices**

Many assistive devices are currently available to help older adults with low vision to maximize performance in occupations. Assistive devices, which are interchangeable with “assistive technology” and “adaptive equipment,” are defined as any item purchased commercially or customized that improves functional abilities of the disabled individuals (Foti & Koketsu, 2013). Low vision assistive devices (LVADs) are used to enhance engagement in daily occupations and examples of LVADs include: electronic vision-enhancement system, prisms, lighting, filters, adaptive computer technology, audio players, recorders, notetakers, communication devices, optical devices, non optical aids, and mobility devices (Copolillo & Teitelman, 2005; Fok, Polgar, Shaw, & Jutai, 2011; Hersh, 2013). Optical devices, such as telescopic lenses and hand-held magnifiers, are particularly helpful for reading (Fok et al., 2011). Non-optical aids, such as enlarged print, high-contrast, and high-intensity lamps are also useful for reading (Cook & Polgar, 2015). Mobility devices, such as long canes and guide dogs help older adults with low vision successfully navigate their environment by avoiding obstacles and

reaching destinations within their community (Hersh, 2013). Overall, the role of LVADs is significant and is often integrated into daily routines to improve the interaction between the older adults with low vision and their environment.

With so many LVAD options available to facilitate occupational performance, the process of properly selecting a device can be complex and overwhelming for older adults with low vision (Copolilo & Teitelman, 2005). Successful use of a device relies heavily on proper selection and an understanding of how to use it. Devices that were improperly selected or prescribed tended to be neglected or disposed of by the user (Copolillo & Teitelman, 2005). Therefore, proper device matching and in-depth training on LVADs may help maximize functional performance in everyday tasks and reduce the likelihood of abandoning the device.

In examining the perceptions affecting older adults' decisions towards using LVADs, Copolilo and Teitelman (2005) found that several older adults disposed or failed to use their LVADs as a result of improper device selection and inadequate device training. The applied ethnographic study involved 15 older adults with a primary diagnosis of low vision. They found that one of the primary barriers to LVAD use was the lack of knowledge regarding available LVADs. Eight adults stated they did not receive alternative medical suggestions, including LVAD options, from their physicians. Therefore, the lack of provider-patient discussion on LVADs and referral to rehabilitation services from their physicians led to barred potential LVAD use and unmet needs. Moreover, results also showed that a lack of training and improper selection of LVADs resulted in a mismatch between its user and device and led to device abandonment. As a result, LVADs were perceived to provide little use and often left users dissatisfied. Moreover, the older adults with low vision who participated in the study also acknowledged the important role of professionals such as ophthalmologists, rehabilitation



specialists, and occupational therapists during the process of introducing LVADs (Copolilo & Teitelman, 2005).

Device abandonment was also found to be prominent among older adults. In a quantitative descriptive study that used telephone surveys, Dougherty et al. (2011) explored the rate of abandonment of low vision devices among 88 older adults in outpatient clinics. Abandonment was described as complete cessation of using the prescribed LVADs in the previous three months. Surveys were administered to the older adults approximately one year after prescription of the LVADs. Results indicated abandonment of at least one prescribed LVAD was found in 21% of the older adults. The abandonment rate of all prescribed LVADs among the 88 older adults was 19%. Reasons cited by the older adults in discontinuing use of their LVADs were the ineffectiveness of the devices, the availability of alternative devices, and changes in their low vision condition. The older adults found that when devices were ineffective for a certain task, they used an alternative strategy. Pressure by family members into obtaining the device and a lack of the older adult's own volition also resulted in the device abandonment. Additionally, the older adults often found that the prescribed devices did not address the progression of their low vision conditions (Dougherty et al., 2011). Though one limitation of this study was a low response rate from the non-random sample, the results still supported that older adults use LVADs in their daily activities if they felt the device was important and assisted with functionality (Dougherty et al., 2011).

In examining the perceived importance of LVADs among adults, Fok, Polgar, Shaw, and Jutai (2011) included 124 different LVADs in their mixed-method design and found varied opinions across devices. Seventeen adults with low vision were recruited through a purposeful sampling method and were asked to report which devices they currently used from a list of 124

LVADs. They were further asked to rank their perceived importance from those currently used LVADs. Among the various categories included in the study, optical devices, and electronic and vision-enhancement systems were the most frequently used (Fok et al., 2011). Optical devices, which included glasses/sunglasses, hand-held magnifiers, and corning lenses were ranked highly important. On the other hand, the long cane ranked less important in relation to optical devices and was used by only seven of the 17 adults. Factors contributing to device usage and perceived importance greatly varied by individual and their personal circumstances (Fok et al., 2011). Results also showed that adults frequently used a combination of devices and gave multiple equal rankings across devices. These findings suggest the importance of considering the whole individual as well as their preferences when deciding on an assistive device. Since LVADs are frequently incorporated into daily routines, understanding its perceived importance by adults with low vision can ultimately provide more information to ensure proper device matching and training.

To sum, several studies have examined the use and importance of various LVADs among adults with low vision (Copolilo & Teitelman, 2005; Dougherty et al., 2011; Fok et al., 2011). While LVADs have initially been designed to help maximize functional independence, there is a high rate of non-usage and abandonment of LVADs. As a result, devices are not used to their full potential. On the other hand, when devices are appropriately matched to their users and properly used, they can improve occupational performance and lead to positive outcomes (Fok et al., 2011). These outcomes may include improved independence for adults with low vision with activities such as community mobility.

## **Community Mobility**

Older adults with low vision often experience difficulties with community mobility (Berger, 2012; Blaylock et al., 2015; Cimarolli et al., 2012). Community mobility involves moving around in the community such as walking, driving, bicycling, or accessing transportation systems (AOTA, 2015). In a qualitative study on the experiences of 22 older adults with visual impairment living in a southeastern suburban town of America, all older adults revealed problems with mobility in the community (Blaylock et al., 2015). During community mobility, older adults reported challenges, such as inappropriate lighting conditions, uneven surfaces, and unfamiliar settings. Older adults with near normal and moderate visual impairment relied on family members or the use of a cane, while older adults with severe and profound visual impairment avoided community mobility altogether due to safety concerns (Blaylock et al., 2015; MacLachlan, Rudman, & Klinger, 2007).

With low vision, older adults may also be more susceptible to risk of injury with environmental factors during community mobility (MacLachlan, et al., 2007). A phenomenological study explored the impact of low vision in older adults and interviewed four older adults with low vision over the age of 70 years old. Results from the interviews revealed a struggle to balance between maintaining everyday tasks while managing potential environmental risks (MacLachlan, et al., 2007). These environmental risks included poor weather, season, time of day, availability of assistance by others, and lighting. To overcome these challenges, some older adults imposed parameters to ensure they minimized their personal risk of injury. For example, one older adult reported that she preferred to use familiar routes and avoided dark walkways. Other older adults in the study became less independent and were confined to

particular walking routes or relied on help from others to go to new places (MacLachlan, et al., 2007).

Similarly, in a qualitative study using semi-structured interviews among 26 older adults with low vision ranging from 20/70 to less than 20/1200, all of the older adults reported challenges with activities outside the home (Berger, 2012). Themes that emerged associated with low vision included difficulty with mobility in the environment due to poor lighting and feeling vulnerable in public due to a decreased sense of safety. Older adults expressed fear of being unable to see traffic and getting hit by a car (Berger, 2012). Consequently, older adults who felt vulnerable in the community were unable to participate in IADLs that were important to them such as shopping or banking. Since older adults with low vision may experience difficulty with community mobility, successful use of LVADs can help them navigate in the outside environment and participate in meaningful occupations (Hersh, 2015; Peham, Limbeck, Galla, & Bockstahler, 2013).

**Long canes.** The long cane, or traditionally known as the “white cane”, is the most widely known and popular assistive device for walking among adults with severe visual impairment (Hersh, 2015; Mount et al., 2001). Long canes provide tactile information through physical contact with the ground to help a person navigate through their environment (Wall, 2002). Among long cane users, the two-point touch is the most commonly used technique in community mobility to warn users of upcoming obstacles in their walking path (Kim & Emerson, 2014; Wall, 2002; Wall & Ashmead, 2002). With the two-point touch technique, the user holds the long cane in their dominant hand with the index finger pointing towards the ground. The user can then detect obstacles with a sweeping motion of the cane by tapping the ground with the cane’s tip from side to side (Wall, 2002; Wall & Ashmead, 2002).

Optimal long cane use requires proficiency of motor and process skills, extensive practice, and constructive feedback from orientation and mobility (O&M) training instructors (Sauerburger & Bourquin, 2010; Wall, 2002). The two-point touch uses isolated wrist flexion and extension to sense subtle information from the environment (Wall, 2002). Long cane users also make decisions based on input from the cane while constantly modifying, adapting, and responding to the environment with a sufficient level of attention (Wall, 2002). As long cane users become more proficient and experienced, they may require less focus to “think” about the techniques during community mobility (Sauerburger & Bourquin, 2010).

Walking performance with the long cane may also depend on many factors including training, experience, and the environment. Wall and Ashmead (2002) conducted a study of four sighted adults who had no previous cane experience to analyze the biomechanical performance and biomechanical features of the two-point touch cane technique. Adults were blindfolded and instructed to navigate a hallway after verbal and guided training with the two-point touch technique by a certified O&M instructor. A motion analysis system recorded how the adults walked along a hallway and back with a long cane. Results showed that the adults increased their walking velocity as sessions progressed with greater proficiency in the two-point touch technique (Wall & Ashmead, 2002). Sighted adults in the study who were blindfolded and had no previous long cane experience were able to demonstrate the basics of long cane use with little practice. However, novice long cane users with low vision should receive additional training with O&M instructors due to a possible lack of generalizability from a controlled environment to the real world with lots of variability in the environment (Wall & Ashmead, 2002).

Long cane users have other challenges in the community (Kim & Emerson, 2014; Sauerburger & Bourquin, 2010). A study by Kim and Emerson (2014) explored experienced long

cane adult users in their ability to detect obstacles in their path using a long cane. Results revealed that the adults failed to detect about half of the obstacles placed in their path regardless of which long cane technique was used (Kim & Emerson, 2014). In particular, failure to detect these obstacles posed a fall risk from tripping over objects that were five to seven inches tall (Kim & Emerson, 2014).

While LVADs such as long canes are available to aid with community mobility, some older adults with low vision refrain from incorporating them into their daily lives. The trend of low long cane use was evident in another longitudinal study that examined whether using optical devices and optical aids helped decrease IADL disability and depression among older adults with age-related visual impairments (Horowitz et al., 2006). The study involved 438 older adults with recent visual impairment. Depressive symptoms were measured using the 20-item Center for Epidemiologic Studies–Depression scale and were measured at baseline and 6-month follow up. Findings showed that the use of optical devices was linked to a decrease in depressive symptoms among older adults with low vision (Horowitz et al., 2006). Additionally, results revealed that 91.1% of the older adults continued to use optical devices, particularly a magnifier, telescope, and special sunglasses after the 6-month period. A majority of older adults, 79.5%, also continued to use adaptive devices, such as telephone aids, handwriting aids, talking books, and other adaptive aids. However, only 8.7% of older adults continued to use the long cane at the 6-month follow-up (Horowitz et al., 2006).

Other studies have also found that older adults with low vision were discouraged from using their LVADs, particularly the long cane. In a study done by Fok et al. (2011), seven of the adults in the study were not currently using their canes, with one adult who revealed his efforts to conceal it when being seen in the public due to feeling stigmatized. In addition, several older

adults with low vision associated long cane use as a symbol of blindness and a psychological barrier (Hersh, 2015). In some cases, these older adults felt that the public was staring at them and therefore felt shame or embarrassment. Another barrier to long cane use were friends and relatives of the adults with low vision who were sometimes ashamed of the long cane. These negative perceptions led to efforts by adults with low vision to hide the long cane or decreased use of the device (Hersh, 2015).

**Assistive dogs.** Canines are another form of assistive device used by people with disabilities (Wiggett-Barnard & Steel, 2008). According to the United States Department of Housing and Urban Development (2016), an assistive animal is a broader term that covers any animal that may be a certified service animal, an emotional support animal, or any other animal that performs tasks for the benefit of the individuals with a disability. Throughout the literature, the terms “assistance dogs”, “service dogs”, and “guide dogs” were all used, though often, service dogs and guide dogs fall under the broader category of “assistance dogs.” Service dogs are trained to do specific tasks that help the service dog owner with their disabilities, other than visual or hearing impairment (Assistance Dogs International, 2016). For example, service dogs may assist their owner with tasks such as picking up objects or alerting others during certain medical conditions such as seizures (United States Department of Housing and Urban Development, 2016).

**Guide dogs.** For visual impairments, a guide dog is the type of assistance dog that is specifically trained to help lead his or her owner who may be blind or visually impaired during community mobility. A guide dog helps an owner with low vision navigate around his or her neighborhood safely by avoiding obstacles (Assistance Dogs International, 2016). When navigating around the community, the guide dog owner gives directional and verbal cues to

which the guide dog must respond (Winkle & Zimmerman, 2009). However, guide dogs are also trained in “intelligence disobedience” and to avoid dangerous situations, such as walking into a busy intersection by selectively re-evaluating unsafe commands by their owners (Guide Dogs for the Blind, 2016a).

A new guide dog owner will need to learn basic techniques that require gross and fine motor skills, such as holding the harness, staying in close proximity relative to the dog, and synchronizing walking speed with the dog’s movements (Tellefson, 2012). Another physical requirement to qualify for a guide dog is previous experience with using long canes and the use of traffic sounds to determine when it is safe to cross a street (GDB, 2016c). Potential candidates with low vision who wish to adopt a guide dog are expected to have the stamina to walk at least one mile with some rest on a daily basis (GDB, 2016c).

In spite of the above requirement, the physical requirements to using a guide dog are, in fact, different than using a long cane. Instead of holding onto the tip of a long cane, the point of communication with guide dogs and their owners occurs at the harness (Peham et al., 2013; Wall, 2002; Wall & Ashmead, 2002). The guide dog owner exerts a constant amount of tension on the guide dog’s harness while walking together (Peham et al., 2013). When a turn or obstacle is anticipated, the guide dog owner recognizes the turn due to a change in the guide dog harness position through tactile input from the guide dog (Magnus, 2014).

Compared to long canes, which are low maintenance, dog ownership has additional responsibilities. Some drawbacks commonly identified were the adjustment periods and effort associated with dog ownership (Camp, 2001; Wiggett-Barnard & Steel, 2008). A study by Camp (2001) analyzed the experience of five adults with mobility impairments who owned an assistance dog. The adults mentioned feeding, grooming, toileting, and veterinary care as



drawbacks to dog ownership. In addition, the adults with mobility impairments who had recently acquired their dogs identified the need for patience during the adjustment period and getting accustomed to a change in their daily habits and routines. Unlike use with a long cane, which was completely controlled by the long cane user, the adults in the study found controlling a dog to be more challenging, especially when their dogs were not doing the intended task (Camp, 2001).

With new guide dog ownership, adults may also have to change their priorities. Wiggett-Barnard and Steel (2008) interviewed six adult guide dog owners with legal blindness to explore their experiences of living with a guide dog. According to the adults, the guide dogs required daily responsibilities. The adults also invested additional time in maintaining the guide dog's health, such as regular exercise (Wiggett-Barnard & Steel, 2008). The adults revealed that they sometimes had to put the guide dogs' needs before their own. One adult explained that taking care of the guide dog was a major responsibility and that one could not fold up at the end of the day like a cane. Additionally, not all adults with blindness have owned dogs as pets before the onset of low vision (Wiggett-Barnard & Steel, 2008). New guide dog owners, therefore, may not have the experience of dog ownership to draw upon to help them with their new added responsibilities.

A qualitative study by Whitmarsh (2005) surveyed 404 guide dog owners and 427 non-guide dog owners to understand their perceptions of guide dogs. The survey asked non-owners what they thought about the expectations of the role of a guide dog, and owners why they applied for guide dogs. Seventy-five percent of current guide dog owners primarily applied to gain assistance with mobility and independence. Whitmarsh (2005) found similar proportions among non-owners, who had limited community mobility and independence, interested in guide dogs.

Only 3% of guide dog owners reported dissatisfaction with using a long cane as motivation for getting a guide dog. Amongst current guide dog owners, 81% reported improvement in mobility and over half reported benefits of increased independence with IADLs. Some owners reported drawbacks of guide dog ownership associated with cleaning up after the dog and encountering places that were not ideal to bring a dog (Whitmarsh, 2005).

However, for some adults with low vision, guide dog ownership may also provide many benefits. In a study by Hersh (2013), 27 adults with low vision from Czech Republic, England, France, Italy, Poland and Spain were interviewed to examine the travel challenges they experienced while using long canes, wheelchairs, guide dogs, and hearing aids. Themes that emerged from the responses of the three adults who used guide dogs included being more physically active and faster walking compared to using a long cane. One of the three adults expressed greater independence when using a guide dog versus using a long cane (Hersh, 2013). The adults reported an increased ability to use the stairs and to avoid certain areas, such as puddles when using a guide dog. The study also suggested that guide dog ownership might provide some psychological benefits to the owners (Hersh, 2013).

### **Psychosocial Aspects of Using a Guide Dog**

Older adults with low vision face unique psychosocial challenges. Low vision may cause feelings of embarrassment when the individual is unable to recognize faces of loved ones or navigate around restaurants and other public spaces. Embarrassment may lead to isolation or a decrease in community participation because of frustration or anxiety (Hersh, 2015). The loss of independence and community mobility may also cause the older adult to become depressed (Hersh, 2015). While there is limited research specifically on older adults who have guide dogs,

studies revealed certain psychosocial aspects that indicate guide dogs as facilitators as well as possible barriers to participation in occupations.

**Facilitators.** There is limited literature and research on psychosocial aspects of guide dog usage in the older adult population. However, studies indicate how owning dogs, in general, can have positive effects on an individual's level of stress, depression, self-esteem, and independence. For instance, in a quantitative study that explored the benefits of dog ownership, Ramírez and Hernández (2014) researched how owning a dog may reduce cardiovascular, behavioral, and psychological indicators of stress and anxiety. Results from 602 men and women dog owners exhibited lower than expected stress levels than non-dog owners as measured by the Perceived Stress Scale (Ramírez & Hernández, 2014).

Stress levels can contribute to the concept of self-perceived health, or how one views his or her physical and mental health status. Ramírez and Hernández (2014) further explored self-perceived health between dog owners and non-dog owners. Results of the study revealed higher self-perceived health in dog owners than in non-dog owners as self-reported on the Short Form Health Survey, which assessed physical and social functioning, physical role, emotional role, mental health, vitality, bodily pain, and general health (Ramírez & Hernández, 2014). Similarly, Dogs for the Disabled, a United Kingdom-based assistive dog program for individuals with physical disabilities, conducted a study on the use of assistive dogs. Results from 57 adult dog owners revealed that disabled people using assistive dogs felt an enhancement in self-perceived health. Sixty-nine percent of adults reported being more relaxed after obtaining an assistive dog; 51% reported worrying less about their health after obtaining an assistive dog, even though only 47% believed their health had actually improved (Lane, McNicholas, & Collis, 1998).

As previously discussed, older adults with low vision and mobility issues may encounter feelings of isolation, which may lead to possible feelings of loneliness and depression. Lane, McNicholas, and Collis (1998) also explored dog companionship and the use of a service dog as being a facilitator in reducing depression and isolation. For physically disabled individuals using an assistive dog from Dogs for the Disabled, 93% of the individuals stated that their dogs were a valued family member. As much as seventy-percent of individuals viewed their relationship with their dog as the most important relationship, and they turned to their dog at times they were feeling sad (Lane et al., 1998).

Overall, guide dog ownership can be a life-changing experience. In Wiggett-Barnard and Steel's (2008) study, eight themes emerged, and both positive and negative aspects were identified. One such theme revealed was that guide dogs improve mobility. The improved mobility increased participant's feelings of safety, leading them to explore their community more because they no longer felt scared (Wiggett-Barnard & Steel, 2008). Among the eight themes that emerged from the study, companionship and an increase in social facilitation were found (Wiggett-Barnard & Steel, 2008). According to Wiggett-Barnard and Steel (2008), one participant was quoted as saying, "It's very nice to have the dog who is always with you and who really seems to care and love me" (p. 1019). Previous research done by Valentine also revealed that service dogs could provide a type of companionship that was closer than family and are emotionally important to their owners (as cited in Wiggett-Barnard & Steel, 2008).

Results of these studies reveal how guide dog usage has the capacity to establish companionship and facilitate social participation in order to combat social isolation and depression among individuals with low vision. Additionally, Wiggett-Barnard and Steel (2008) suggested that the affection and companionship experienced with the guide dog can help

improve self-esteem and self-acceptance (Wiggett-Barnard & Steel, 2008). As cited by Wiggett-Barnard and Steel (2008), the studies by Valentine revealed how companionship can be a psychosocial facilitator. Furthermore, according to Valentine, self-esteem and independence increased after participants acquired a service dog and showed that people with disabilities reported feeling more assertive, confident, and in better control of anxiety while using a service dog (as cited in Wiggett-Barnard & Steel, 2008).

Another dominant theme revealed by individuals in the study was that guide dogs serve as social magnets (Wiggett-Barnard & Steel, 2008). The term “social magnet” refers to how the guide dog creates more opportunities for social interaction. This theme illustrates how people with guide dogs are approached more because of the presence of their dogs, therefore, making the individual a ‘social magnet’. These results are also concurrent with previous research by Lane et al., (1998) regarding social facilitation. The study results revealed that 92% of 57 adult assistive dog users reported frequently being approached by strangers when they were out with their assistive dog. The study also revealed that 75% of individuals had made new friends since having their assistive dog (Lane et al., 1998).

In addition to socialization, self-esteem, and affectionate relationships, guide dogs can also facilitate feelings of independence for the owner. In a quantitative pre-and post-test pilot study, the effects of assistance dogs were assessed for participants with mobility or hearing deficits (Rintala, Matamoros, & Seitz, 2008). The study compared an experimental group of 18 adults and a control group of 15 adults. Adults with hearing deficits received a trained hearing dog and adults with mobility impairments received a service dog. All adults in the experimental group received an assistance dog while the control group was placed on a 6-month wait list. Evidence revealed that the adults in the experimental group who received a service dog depended

less on others to perform daily activities, and were able to reduce the amount of paid assistance required after receiving the service dog (Rintala et al., 2008). As a result, this may imply that assistive dogs, such as service or guide dogs, can allow older adults to rely less on family members. Moreover, the study represents the possibility of reducing financial dependence on hired caregivers.

**Barriers.** While much of the literature focuses on service dogs or guide dogs as facilitators, there are some studies that have explored psychosocial barriers for the older adult population using service or guide dogs. According to Wiggett-Barnard and Steel (2008), instead of being a social facilitator, some participants found that the guide dog caused people to avoid the owner, mostly in part due to fear of the dogs. Not only can the new acquirement of low vision and/or obtaining a guide dog be overwhelming for the older adult affected, it can also be difficult for family members to accept the older adult's condition. For instance, some family members may not want to give up his or her role as primary caretaker. Conversely, other family members may put pressure on the older adult to get a guide or assistive dog (Lane et. al, 1998). According to Lane et al. (1998), those adults who were pressured to acquire an assistive dog stated the dog was more trouble than it was worth and wished the dog to be more reliable.

In Wiggett-Barnard and Steel's (2008) study, the overall experience of owning a guide dog also revealed that there was a social stigma and ignorance of what guide dogs are allowed to do and how they can help adults with low vision. For instance, adults with low vision who described their lived experiences of using a guide dog reported being rejected from public places because of having a dog with them (Whitmarsh, 2005; Wiggett-Barnard & Steel, 2008). Being rejected from public places may lead to an older adult with low vision to have feelings of being viewed as an outsider by the general public. Similarly, other service dog owners reported

unwanted attention because of the dogs. For instance, dog owners were challenged about being allowed to bring the dog into restaurants (Rintala et al., 2008). These studies illustrated how the presence of a guide dog may bring up issues of being stigmatized because of their disability and may lead to avoidance of participation in daily activities.

Another psychosocial challenge is related to depression from the loss of a dog. Guide dogs provide a sense of companionship that is often valued at the same level as a family member (Lane et al., 1998; Whitmarsh, 2005). Older adults with low vision who have lost their guide dogs or retired their guide dogs due to old age may be reluctant to obtain another one to avoid re-experiencing the grief and sadness of losing a dog. In a study analyzing the loss of a companion dog in adult women, results revealed that the loss of a companion dog was a highly stressful event (Tzivian, Friger, & Kushnir, 2015). In the study, older adults who had their companion dog passed away were compared with current dog owners on three different stress scales: perceived stress, somatic complaints, and total stress. All three stress scales were higher in older adults who had lost their dog (Tzivian et al., 2015). While this study is limited to only women, it has great implications on how losing a dog can have a negative effect on the dog owner.

Lloyd, Budge, Grow, & Stafford (2016) investigated the themes that contributed to successful or unsuccessful guide dog matching and partnerships. Fifty adults with an average age of 50.3 years old were surveyed when they acquired a guide dog at an average age of 37.6 years old. Guide dog ownership in the study varied from adults who owned their first guide dog, adults who owned more than one guide dog, or owned guide dogs in the past and did not currently own a dog. The study had an unexpected finding called the 'first dog effect' or 'second dog syndrome' in which guide dogs after the first were favored less than the first. A possible explanation may be due to the first guide dogs to be the one to initialize improvement in mobility

after facing the barriers of low vision. Therefore, guide dog owners may have an understanding or a lower expectation from subsequent guide dogs. A large number of guide dogs were returned to the guide dog organization after three months, presumably before an emotional bond was developed (Lloyd, et al., 2016).

Additionally, other studies have revealed that the human-pet bond is an attachment bond similar to that of a human-human attachment bond. Therefore, a reaction to the loss of a pet should be treated just as a loss of a human-human attachment bond (Field, Orsini, Gavish, & Packman, 2009). As the literature reveals, there are many psychosocial barriers facing first-time guide dog users, especially towards the end of the life of a guide dog. Depression and stress following the loss of a dog as well as being stereotyped or stigmatized by society may lead to older adults avoiding getting a second guide dog altogether, therefore inhibiting or limiting their community mobility and participation in occupations. Furthermore, potential first-time guide dog users may want to avoid the loss altogether, possibly because they have already experienced the loss of a pet in the past and see the guide dog as a future loss rather than a gain. Based on the literature review, there is a gap in research involving older adults with low vision who are first time guide dog users, particularly in the use of trained guide dogs.

### **Conclusion**

Having low vision significantly impacts older adults in their independence, psychological health, and ability to participate in occupations. The literature reveals how low vision among older adults is associated with challenges in everyday tasks, particularly in reading tasks and community mobility. However, there is a gap in the literature regarding impacts specifically on first-time guide dog owners among the older adult population. As the percentage of older adults with low vision continues to rise, it is imperative to examine the facilitators and barriers they



may face when first obtaining a guide dog. While LVADs have shown promising effects towards promoting functional independence and occupational engagement in older adults, research on the use of guide dogs as an assistive mobility device is very limited and requires further attention, especially among the older adult population and older adults who are first time guide dog owners.

### **Statement of Purpose**

The purpose of this study is to explore the facilitators and barriers of living and working with a guide dog as experienced by first-time guide dog owners above the age of 55 with low vision. First time guide dog owners were selected for this study to gain perspective into how a guide dog affects an older adult's daily living patterns and routines. Additionally, first time guide dog users will not have 'second dog syndrome, as mentioned earlier in a study by Lloyd et al., (2016), thus exploring the novel experiences of guide dog ownership. The inclusion of only first-time guide dog ownership subjects them to having no guide dog ownership experience.

Participant's insight into the identification of the facilitators and barriers can help organizations such as GDB to enhance their application process, matching process, and training program to make it more accessible and successful for older adults. The study will also attempt to improve outcomes for older adults with a guide dog or potential candidates for obtaining a guide dog.

Occupational therapists are trained with an understanding of their client's capacity for function with disabilities. The abilities of OTs to analyze the requirements of a task with activity analysis and knowledge of training in assistive technology can provide programs such as GDB organization and clients with new strategies to maximize daily function. In addition, OTs are skilled in evaluating and recommending assistive devices for older adults to compensate for low vision deficits (Camp, 2001). Occupational therapists can also help older adults with low vision

become more aware of the many benefits of guide dog ownership in addition to forming healthy habits such as emotional support and companionship. Therefore, understanding the challenges of declining vision and its psychosocial associations among older adult guide dog owners will provide OTs with the knowledge to better integrate older adults with low vision with their guide dogs to help improve their quality of life.

### **Operational Definitions**

**Assistive animal:** An assistive animal is a broader term that covers any animal that may be trained to be a certified service animal, an emotional support animal, or any other animal that provides assistance or performs tasks for the benefit of a person with a disability (United States Department of Housing and Urban Development, 2016).

**Being a guide dog owner:** Tasks and expectations while physically caring for and/or handling the guide dog.

**Change in habits and routines:** A change in patterns of behavior in previously practiced ways of carrying out repetitive tasks and situations.

**Community mobility:** The ability to move around the community by walking, driving or taking public transportation (AOTA, 2014).

**Guide dog:** Canines used to assist blind and visually impaired individuals by avoiding obstacles, navigating the environment, and ensuring safety of owner (Assistance Dogs International, 2016).

**Guide dog enhances autonomy:** An increase in one's independence and freedom from external control.

**Guide Dogs for the Blind:** Organization that breeds and trains dogs that aid in community and functional mobility of individuals who are blind or have low vision within the United States and Canada (GDB, 2016a).

**Human-guide dog bonding:** The psychological connection between the participant and his or her guide dog.

**Increase in community integration:** An increased ability to move around and perform any activity outside of the home.

**Low vision:** “Visual acuity that is 20/70 or poorer in the better-seeing eye and cannot be corrected or improved with eyeglasses” (The Vision Council, 2015).

## **Theoretical Framework**

### **Model of Human Occupation**

The theoretical framework chosen for this study is the Model of Human Occupation (MOHO). The MOHO aids OTs by providing an explanation of why an individual may or may not participate in certain occupations across the lifespan. The MOHO contains inter-related components: volition, habituation, and performance capacity, which are influenced by the environment (Dunbar 2007). According to Dunbar (2007), volition is defined as the motivation and values for the individual to perform the occupation. Habituation refers to how an individual develops patterns through roles and routines while performance capacity is the mental and physical abilities to complete the occupation (Dunbar, 2007). Occupational therapists use the MOHO frame of reference to identify aspects that may hinder or aid the person from participating in occupations.

The concept of volition states that humans have a desire to engage in occupations as shaped by previous experiences (Dunbar, 2007). Personal factors including thoughts, feelings, values, capabilities, and interests influence motivations toward an activity. Support from peers was a motivation for some adults with low vision to overcome barriers of embarrassment and

using their LVADs in public. Compared to long canes, some adults with low vision found using guide dogs to be less stigmatizing, which may have contributed to the motivation for using guide dogs (Hersh, 2013). The companionship and social support that guide dogs provide are often the primary motivation for adults to acquire companion animals such as dogs (Whitmarsh, 2005). Therefore, the independence and companionship associated with guide dogs may be more motivating for adults with low vision because of the multiple benefits that they provide.

Habituation is the process in which occupations are organized into habits and roles, which are often resistant to change (Dunbar, 2007). Habits are acquired automatic ways of performing or responding to routines (Schell, Gillen, & Scafa, 2014). Habits can either support or interfere with performance in occupations. Studies have shown that the use of LVADs, such as guide dogs, requires responsibilities that help them to develop habits and routines in a more structured lifestyle (Camp, 2001). Wiggett-Barnard and Steel (2008) found guide dog ownership to be a life-changing experience amongst adults. Examples of life-changing responsibilities included walking, feeding, grooming, and toileting that became part of the adult's daily routine after obtaining a guide dog (Wiggett-Barnard and Steel, 2008).

The performance capacity refers to a person's lived experiences, such as previous successes and failures in using one's body to engage in occupations (Schell et. al, 2014). Again, Wiggett-Barnard and Steel's (2008) study highlighted how adults experienced their performance capacity increased after working and living with a guide dog. For instance, the results of the study demonstrated how guide dogs could increase mobility confidence, which can lead to more social participation and engagement in occupation (Wiggett-Barnard & Steel, 2008). The more success an individual has in managing one's impairment, the greater his or her sense of performance capacity will be. Furthermore, a person's underlying mental and physical

capabilities shape how he or she will choose to participate in occupations (Schell et. al, 2014). For instance, previous failures may inhibit a person from participating in similar future occupations.

Volition, habituation, and performance capacity are components of the MOHO that contribute to participation in activities. These components lead to one's occupational identity and competence. Older adults who acquire low vision later in life are faced with the difficult adjustment period of losing their vision and learning new skills in order to continue to participate in occupations (Schell et. al, 2014). With the addition of a guide dog, an older adult may feel more confident to go out in the community and therefore participate in meaningful activities.

### **Application of the MOHO**

The purpose of the study was to explore the facilitators and barriers of owning a guide dog for the first time as experienced by older adults with low vision participating in GDB organization. By applying the concepts of the MOHO, semi-structured interview questions (Appendix A) were developed to help identify barriers and facilitators that will provide a better understanding of how to enhance the experience of older adults with low vision and their guide dogs. Interview questions were constructed to explore the restricting and supporting factors as they were related to volition, habituation, and performance capacity.

To address volition, some questions asked participants their motivations and interests for seeking guide dog services. As suggested by the 'first dog effect', interviewing older adults with low vision who are first-time guide dog owners is important because they have not had the extensive guide dog ownership experience and are not subject to conflicting memories of episodes between first, second, and third guide dogs, for example. To address habituation, interview questions were reflected around the process of developing or changing the habits,

roles, and routines after having a guide dog. Questions took into consideration of how participants' habituation may have been altered as a result of factors such as having to walk the guide dog regularly or stigma surrounding owning a guide dog. Other interview questions focused specifically on the participant's adjustment period while having a guide dog. For example, participants were asked about their habituated patterns of daily tasks after having a guide dog.

To address performance capacity, initial interview questions focused on the participants' lived experiences of changing vision and how their past failures or successes influenced their decision to use a guide dog. Follow-up questions encouraged participants to discuss how their sense of capacity to perform occupations had changed since acquiring low-vision and using a guide dog for the first time. Questions addressed the participant's psychological and physical capacities while using the guide dog. Open-ended questions determined what physical and psychosocial facilitators and barriers shaped participants' lived experience in use of a guide dog. Interview questions also guided participants in discussing what specific facilitators or barriers affected their daily engagement in occupations since obtainment of a guide dog.

### **Ethical and Legal Considerations**

To ensure the participants' safety, the Institutional Review Board (IRB) application was submitted and approved by the Dominican University Institutional Review Board for Protection of Human Subjects (10511). The IRB is an oversighting body that oversees the study's method and procedures to assure that the participants experienced no harm. The AOTA Code of Ethics was abided throughout the study and focused on the following main principles: autonomy, veracity, beneficence, and nonmaleficence.

Autonomy assures that participant's privacy and confidentiality is protected (AOTA, 2015). Legal consent forms were mailed to the participants (Appendix B), which participants signed prior to the data collection. Participants were also informed that they were able to withdraw anytime during the study without affecting their membership and relationship with GDB organization. Prior to starting the transcription process, research assistants completed a confidentiality form, which was a non-disclosure agreement that assured participants' private and personal information would be protected by the research assistants (Appendix C). Research assistants were current students in a healthcare class (OT 5105) at Dominican University of California who have explained their knowledge in protecting research participants' personal and private information.

Each participant's identity was kept confidential and independent from other participant data by assigning each participant a number and individual USB drive for data storage. Identifying information regarding the participants were stored in a password protected master excel sheet in a stored USB located in a locked room at Dominican University of California's campus. To transcribe data, the investigators and research assistants logged the USB drives in and out of the designated locked room. Any identifying information were removed during the transcription process. The transcriptions, without participants' identifying information, were then transferred and stored in a restricted access Google document for backup as well as individually stored on an assigned USB in the locked room. After the completion of the study, all information on the USB drives were deleted.

Veracity is providing accurate and complete information about the study to the participants (AOTA, 2015). The consent form stated the purpose, procedure, potential risks, and benefits of participating in the study. In addition, the participants received a copy of the Bill of

Rights during the consent process (Appendix D) to protect the rights of the participants.

Participants were also informed that their name and any identifying information from the interview were removed during the transcription process. Furthermore, participants affirmed their verbal consent to be audiotaped before beginning the semi-structured interviews.

Beneficence ensures the safety and well-being of all participants (AOTA, 2015).

Investigators acknowledged that responses from each participant were important and there was no judgment made to their answers. The interviewer reminded the participants that they had the right to refuse to answer any questions during the phone interview. If the participant became uncomfortable, the investigator would have stopped the phone interview and informed the participant that he or she may withdraw from the study. There were no consequences nor did withdrawing from the study affect their membership and ongoing support from GDB organization. The data from the individual phone interviews were not shared and only the aggregate summary was shared with GDB organization.

Nonmaleficence protects the participants from any physical and mental harm (AOTA, 2015). For the study, there were no known physical risks to participants. To protect the participants from mental harm, participants were notified about the purpose of the study at the beginning of each phone interview. Investigators informed and reminded the participants that they had the right to skip the question without consequences. If the participants had any concerns and they were uncomfortable discussing with the investigators, the participants had the choice to contact the faculty advisor, Dr. Kitsum Li, to address their concerns accordingly. Investigators took every precaution to ensure these leading ethical principles were upheld during and after our research study.



## **Methodology**

### **Research Design**

A qualitative phenomenological study was used to explore the facilitators and barriers of owning a guide dog as experienced by older adults with low vision participating in GDB organization. A phenomenological study focuses on what people experience and how they interpret those experiences (Portney & Watkins, 2009). Therefore, this type of study was the best approach to understand the perspective of older adults' experiences of living and working with guide dogs for the first time within their first year after acquiring guide dogs. Data were gathered from semi-structured phone interviews and themes were extracted.

### **Agency Description**

Guide Dogs for the Blind is an organization that provides guide dogs and training at no cost to candidates who are legally blind or have low vision. To receive a guide dog through GDB organization, a candidate must meet all application requirements, including an in-depth written application, phone interview, and home visit. Additionally, proof of legal blindness and other medical forms are required, such as a physician's health report, ophthalmologist's report, mental health report, as well as proof of orientation and mobility training within the previous five years. Once approved, GDB organization provides guide dog training for two weeks at the San Rafael, California campus. Special case-by-case considerations are given to those requesting training in their own home environment (GDB, 2016b).

### **Population**

For this study, seven older adults were recruited. The research study included English-speaking adults who were at least 55 years old, and have acquired low vision as their primary

diagnosis. All participants were recruited through GDB organization in San Rafael, California. Participants were first-time guide dog owners who have recently obtained a guide dog from three months to one year from the time the study was carried out. Participants who had a diagnosis of a progressive illness, such as Parkinson's disease or multiple sclerosis, were excluded from the study due to possible confounding factors from the progressive condition and declining low vision.

A letter of agreement for collaboration was signed by Ms. Theresa Stern, Vice President of Outreach, Admissions, and Alumni Services of GDB organization (Appendix E). Participants were recruited using a purposive and snowball sampling of recent graduates from GDB organization. Potential participants were initially contacted via email by Ms. Stern, and a follow up electronic flyer was emailed to all the potential participants. The electronic recruitment flyer outlined the research and invited older adults to participate in the study (Appendix F). If potential older adults were interested in partaking in the study, they were directed to contact Ms. Stern. In addition, interested participants were asked to refer other older adults whom they knew would be interested in participating in the study.

### **Data Collection**

The goal of this research study was to identify facilitators and barriers to guide dog use among older adults with low vision. A semi-structured phone interview was completed with seven participants. The interview format was intended to encourage an open dialogue for emerging themes. Investigators, guided by input from GDB's contact, Ms. Stern, generated interview questions for this study. Ms. Stern has been working at GDB organization for over ten years and is a guide dog user herself. Ms. Stern's work and personal life experience provided insight into problems she has observed among older adults with low vision. Furthermore,

investigators developed interview questions based on the MOHO frame of reference that focused on changes in daily activities since obtaining a guide dog. Participants were asked about motivating factors that led them to acquire a guide dog, how their daily life habits have changed, and benefits or barriers they faced since obtaining a guide dog. Investigators asked additional prompting questions to obtain more detailed information that expanded on participants' relevant experiences with the guide dogs.

Data collection was obtained from semi-structured phone interviews led by two investigators. To ensure consistency, the same two investigators completed all of the interviews. The older adults were asked to complete the phone interview in a quiet setting such as their home. Each interview lasted 60-75 minutes and was recorded using the smartphone application Call Recorder (Nicosia, Cyprus). Each recorded telephone interview was immediately deleted from the investigator's smartphone after transferring to a password-protected file onto a designated USB drive.

### **Data Analysis**

An inductive data analysis process was performed collectively by the investigators and capstone faculty advisor. Inductive data analysis refers to the process in which themes, patterns, and analysis categories emerge from the data (Patton, 1990). Best practices for data analysis were based on Lincoln and Guba's framework to enhance the trustworthiness of the qualitative inquiry (Lincoln & Guba, 1986). In Lincoln and Guba's framework of qualitative inquiry, trustworthiness includes credibility, dependability, confirmability, and transferability (Lincoln & Guba, 1986). Dependability was maintained by minimizing intrinsic researcher bias using investigator triangulation amongst the research team. The audio recordings on the USB drives were transcribed verbatim using Express Scribe, an NCH® software (Greenwich Village,

Colorado). The transcriptions were completed by the investigators and eight research assistants, who participated in a transcription training session led by investigators to ensure fidelity of the transcripts. Research assistants training session included education on maintaining transcribing consistency using examples, hands-on tutorials of Express Scribe, and emphasis on maintaining patients' confidentiality. All transcripts were audited for accuracy by re-listening to the audio recordings and making necessary corrections for errors until consensus was reached through investigator triangulation. All four investigators verified three of the seven transcripts. The remaining four transcriptions were randomly assigned to each investigator to verify individually. The study's inter-rater reliability was increased as all investigators verified all seven transcripts.

A transcript was randomly chosen to be the first data set for an open coding session with investigators, research assistants, and the capstone faculty advisor. Prior to the first open coding session, four investigators and the capstone faculty advisor individually coded the chosen transcript and recorded results on notecards. The notecards contained key phrases that emerged from the transcript related to guide dog ownership.

Open coding served to establish a set of operational definitions, which were inputted electronically into the Dedoose software (Los Angeles, California) as a foundation for coding the seven transcripts. Open coding involved sorting the key phrases related to the experience of guide dog ownership into three piles, "keep", "maybe", and "rule-out", based on the most common recurrence amongst the combined researchers' note cards. Each of the three categorized piles was further scrutinized and audited using the constant comparison method with aid from student assistants (Saldana, 2015). Each pile was further categorized, recategorized, and condensed in the second open coding session.

A second transcript was randomly chosen for the second open coding session. The second transcript was subject to the same exercise and level of scrutiny of sorting recurring key phrases and was combined with the original three piles from the previous open coding session. In the third open-coding session, repeating/overlapping phrases were identified and categorized. Data saturation was reached in this third open-coding session. Hence, this session combined notecards from both previous open coding sessions to validate conclusions and reach a consensus of the working operational definitions. To reduce bias, all investigators met weekly to discuss the analysis process and review information for consistency and accuracy.

The tentative operational definitions were each defined after reaching 100% consensus. The operational definitions served as a basis for agreement if there was a dispute as to if a code belonged to a certain category. The operational definitions were entered into the Dedoose software as parent codes. Investigators and the capstone faculty advisor collaborated on each transcript to code excerpts on Dedoose until 100% consensus. Only one code per participant based on appropriate situation and context was recorded to avoid skewing the data set towards a specific case. Additional instances of a code within a transcript that was already coded for the particular participant were not included again the code. Themes in the results section were extracted based on co-occurrence using the qualitative analysis tools in the Dedoose software.

### **Data Confidentiality**

To establish confidentiality in the study, recordings of the phone interview were saved onto USB drives and erased from the investigator's smartphone. Anonymity was established by assigning each participant to a transcript that was stored on his or her own USB drive using a corresponding alphabetical letter. In addition, participant's transcripts had identifying information removed for anonymity and were stored on a restricted access on Google Documents

accessible only to researchers, research assistants, and the faculty capstone advisor. Research assistants who performed transcriptions were required to sign and abide to terms of a confidentiality agreement form. Data were protected during transcription as investigators and research assistants signed and logged the USB drives in and out of a designated locked room on Dominican University of California's campus. The log was monitored by the capstone faculty advisor.

The investigators, research assistants, and capstone faculty advisor had access to all participants' USB drives and the central backup USB. Upon completion of transcription, research assistants saved one instance of the participant transcript onto the assigned USB drive secured at Dominican University of California's campus and a second instance on the restricted access Google Documents. The additional USB that served as a central secured backup on campus was periodically updated. After one year from completion of this research study, all USB drives and Google Documents containing recorded interviews and transcriptions will be erased.

## **Results**

Seven participants from GDB organization participated in a semi-structured phone interview with two investigators. Three males and four females between the ages of 61 and 71, with a mean age of 65 years old ( $SD = 3.9$ ) were interviewed. The average time range of having a guide dog was 6.2 months ( $SD=2.7$ ). Among the seven participants, five had retinitis pigmentosa, one had glaucoma, and one had Sorsby fundus dystrophy. Through constant comparison methods, five themes emerged from the study and were organized according to MOHO's three components: habituation, performance capacity, and volition to provide a better insight of the facilitators and barriers when using a guide dog. An emerging theme related to habituation is the theme of 1) changes in habits and routine. Themes for performance capacity

includes 2) being a guide dog owner and 3) increase in community integration. Themes pertaining to volition are 4) human-guide dog bonding, and 5) guide dog enhances autonomy (Figure 1 and 2).

Figure 1. Five Themes. Displays where each theme is categorized under the Model of Human Occupation. Photo used with permission from Guide Dogs for the Blind Organization

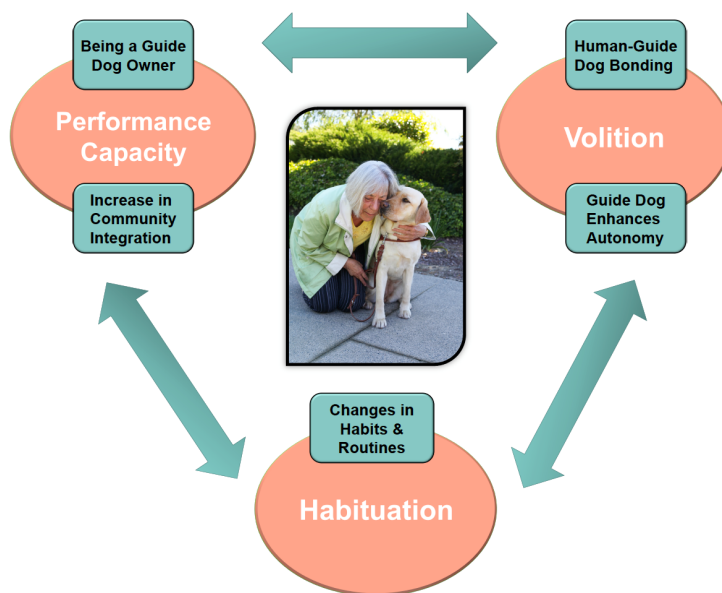
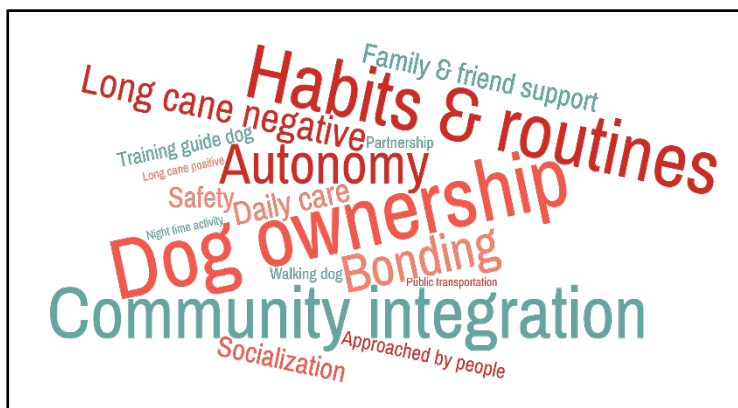


Figure 2. Word Cloud. Font size of phrases indicates frequency of recurrence among the seven transcriptions.



### Changes in Habits and Routines

Changes in habits and routines refer to a change in patterns of behavior in previously practiced ways of carrying out repetitive tasks and situations. Changes in habits and routines

took place after acquiring the guide dog. Participants reported having a more consistent schedule due to the needs of the guide dog, which helped with incorporating new responsibilities of owning a guide dog. Changes in habits and routines led to new responsibilities including walking the guide dog for certain distances a day, feeding, grooming, and relieving. While some participants reported initially feeling overwhelmed with the adjustment in responsibilities, they were able to become accustomed to it. One participant stated that having a schedule provided him with more structure. In addition, many participants expressed that this type of structure allowed them to feel more independent.

### **Being a Guide Dog Owner**

Being a guide dog owner consisted of tasks and expectations while physically caring for and/or handling the guide dog. All seven participants reported increased physical responsibilities after obtaining a guide dog, which included feeding, grooming, and walking the guide dog, which in turn structured their routine and habits. A few participants stated, though they were aware of the general responsibilities, certain responsibilities came as a surprise. For instance, one participant reported unexpectedly having to learn the new responsibility of brushing the dog's teeth, while another participant stated having to clean up after the dog relieved itself.

**Physical handling and training.** Training the guide dog and learning the responsibility of dog handling was also a part of being a guide dog owner. Two participants expressed the need to learn new techniques to physically restrain the dog when it became overly excited or distracted by the presence of other people or dogs. For example, the guide dogs would try to jump on other people or dogs while out in the community, which caused the participant to feel scared. Also, as new guide dog owners, the participants needed to consider restrictions when traveling with their guide dog. Two additional participants stated that it was difficult to bring



their guide dog to certain locations, such as noisy areas. One participant stated that she was refused services from restaurants. Another person was refused service by a personal car service as a result of having the guide dog with him.

### **Increase in Community Integration**

This theme refers to an increased ability to move around and perform any activity outside of the home, including increased transportation, physical activity, safety, independence, and socialization. Within this theme, four subthemes emerged: increased transportation and physical activity, increased independence and safety, increase in nighttime activity, and increased socialization.

**Increased transportation and physical activity.** All of the participants explained how much more they explored their community through walking and taking public transportation since obtaining their guide dog. One participant stated he was able to ride the bus, taxi, and train with his guide dog, while another participant had been flying more since he had gotten his guide dog. Three participants reported that their guide dog helped them to get out and exercise. They also reported that their physical activity increased since they made more efforts to go outside with the guide dogs.

**Increased independence and safety.** Four participants reported having increased independence with their guide dog while in their community than with their long cane. One participant who reported having trouble with obstacles and stairs in public with his cane, stated his guide dog “allows me to be free-er and move about without fear of getting hurt, or killed, or run over.” Another participant expressed the ability to complete more tasks by himself, expressing,

If I had a cane, I would be less secure with that. I would probably avoid many things without some other person with me. I feel so comfortable with her. I trust her to be able to keep me safe whether it be San Francisco or downtown or Los Angeles or just around the neighborhood type of thing.

Overall, participants stated they did not feel as safe when walking out in the community with their long cane when compared to using their guide dog. Participants reported that when using a long cane, they would run into obstacles that were not detected by the long cane, which placed them at greater safety risks.

**Increase in nighttime activity.** Additionally, three of the seven participants reported increased nighttime activity after obtaining the guide dog, something they avoided before having the guide dog.

“[Guide dog] does really well at night. So I was shut in at night and now I am able to do a whole bunch of stuff at night.”

“I get out now later in the day, but before when it was getting dark, I wouldn't get out at all and I would stay in the house or even out in the yard so, yeah, I get out.”

“She makes up for the things I don't see and is trained to see. Sometimes it's just the blending of blacks and white or if it's a night-time thing and a black sign, I won't see it. If it's a white sign, I might see it, but she knows to go around.”

Increased night time activity also stemmed from participants feeling more safe with the guide dog than when using the long cane, which one participant reported “[the long cane] always getting stuck in the cracks in the street.”

**Increased socialization.** A majority of the participants also reported that more people approached and greeted them with their guide dog, compared to when they used a long cane.

Additionally, being out in the community with their guide dog allowed them to engage in new social interactions with others. Five of the participants expressed an increase in being approached by people, with one participant describing the guide dog as the “center of attention” and often received positive comments from people. One participant stated he was treated more like an adult with his guide dog compared to using his long cane:

The cane it's a good tool but with the cane, is one where people felt sorry for me when they saw me with it. More people would come up to me and ask me if they could help me across the street. Could I find the chair for you? I would hear people talking in the distance and they would be saying things like we're ten feet in front of you. You have to go to the left. You have to do this you have to do that. There's a stairway there. Those kinds of things. With [guide dog], they just watched and generally what they say is you have a beautiful dog. That's the number one thing that's stated to me every day. So there's a huge difference. The difference is I'm not treated like a child. I'm an actual adult in the community.

Another participant stated she had met more people in the previous six months than in her whole life as a result of being approached by people, whereas she had felt ignored before she had her guide dog. Although more people greeted them, three participants reported that their circle of friends remained the same. Overall, all participants reported that the guide dog provided more feelings of security and allowed them to be more active and social outside of their home. This led to an increased sense of independence and confidence, allowing them to feel more integrated into their communities.

### **Human-Guide Dog Bonding**

Human-guide dog bonding refers to the psychological connection between the participant and his or her guide dog. All seven participants revealed that they had a strong bond, trust, and support with their guide dog. One participant stated she felt “completely bonded” with her guide dog, who learned to slow its pace to accommodate her during walks. Furthermore, having a guide dog provided a sense of companionship and a sense of partnership for all seven participants because both the participant and the guide dog were required to work together to safely walk in the community. One participant reported that she developed trust and a level of communication with her guide dog. Another participant stated being “great friends from the beginning” and similarly, another participant stated having “grown attached” to her guide dog. Additionally, one participant stated, “...we were able to bond and figure things out. We’re one now.”

### **Guide Dog Enhances Autonomy**

Having a guide dog enhanced the participants’ autonomy, that is, one’s independence and freedom from external control. While participants reported negative psychological aspects of using the long cane such as feelings of awkwardness, embarrassment, inadequacy, and low self-esteem, using a guide dog created positive internal feelings. Feelings of increased confidence and self-esteem were strongly associated with the use of the guide dog. Participants also revealed feeling positive, and a greater sense of wellbeing with their guide dogs. Some participants expressed that having a guide dog also made their life more fulfilling and motivating, which led to a more independent lifestyle. Several participants reported feeling proud, motivated and increased positive thoughts after obtaining the guide dog. Another participant who felt the

negative impacts of his low vision on his work and leisure tasks found new autonomy after obtaining a guide dog.

Over the 35 years that I have been diagnosed with Glaucoma, I have basically been losing, you know, always being a negative impact on me in the sense of not being able to do the work [of] my professional career, not being able to drive, not being able to see television, not being able to go to the places that I used to, not being able to travel in the same way that I once did, not being not to do the recreational things, same with the grandkids. All of those things were sort of negative, and negatively obviously impacted me greatly in the way in which you deal with everyday living things. But when I received my guide dog I related to the first gain, and I was always losing over the years . . . getting the guide dog was such a positive and made such an impact on me that it would be the first gain that I've witnessed.

### **Discussion**

This qualitative phenomenological study examined the possible facilitators and barriers of having a guide dog for the first time among seven older adults with low vision. Participants obtained their guide dog from GDB organization and the average time of guide dog ownership was 6.2 months. Interview questions in our study were guided by the theoretical framework MOHO. All three components of MOHO, habituation, performance capacity, and volition were demonstrated in participants' responses. Considering that all of the participants were new guide dog owners, it was no surprise that habituation was a dominant theme in our study. New habits and routines were formed to keep up with the care of the guide dog. Performance capacity related to the physical responsibilities of the guide dog and how unaccustomed some participants

were to caring for or handling a guide dog. Finally, many participants demonstrated volition in the form of being motivated to maintain or increase their independence by using a guide dog.

The five themes established in this study provide implications for occupational therapy practice and information for older adults with low vision who are considering a guide dog. Additionally, our literature review had revealed that devices that are appropriately matched to its user and properly used can improve occupational performance (Fok et al., 2011). Furthermore, with improved occupational performance, an older adult may experience greater confidence, which could lead to further distances travelled from the home and/or into uncommon areas not travelled prior to having an appropriate assistive device. Overall, this study has provided a greater understanding of guide dog ownership among older adults with low vision. Participants' responses provide insight for guide dog organizations, such as GDB, and can promote improvement of service delivery and training to better support older adults with low vision. Services provided by OTs and guide dog organizations can promote and improve older adult's abilities to travel in their community with more confidence and independence, thereby increasing their quality of life.

Themes from this study indicate that barriers of guide dog ownership included greater responsibilities of caring for the guide dog, the initial adjustment period, the guide dog's distractibility, and physical challenges associated with care for the guide dog. Learning new tasks and taking on more responsibilities may be a barrier for some older adults. The new physical responsibilities may also pose a problem for older adults unaccustomed to handling large dogs, especially if the dog is distracted by external stimuli. However, our study findings showed that among seven older adults with low vision using a guide dog, the facilitators had greatly outweighed the barriers. Positive experiences or facilitators of guide dog ownership

included an increase in community integration, human-guide dog bonding, and enhanced autonomy by the guide dog.

### **Habituation**

*Changes in habits and routines* appeared to be an adjustment for all participants.

Habituation plays a key function in maintaining behavior. According to participants, adhering to a set schedule and making room for the dog and its equipment were major contributing factors to daily changes in habits and routines when owning a guide dog. Changes in daily patterns, habits, and routines may be harder for older adults due to years of repetition or personal preference and require an adjustment period. This theme supports the current literature of how guide dogs can change a person's lifestyle (Camp, 2001; Hersh, 2013; Rintala et al., 2008; Wiggett-Barnard & Steel, 2008). While the guide dog required more structure and schedules, a dominant theme among participants was that they were able to adjust quickly and determined the changes were worthwhile. Overall, participants stated that they had to do more planning before leaving their home, such as for travel, visiting friends with others pets, or crowded events. The additional time involved with planning and caring for a guide dog suggests that older adults can greatly benefit from transitional training.

### **Performance Capacity**

Performance capacity relates to a person's mental and physical abilities to complete occupations (Dunbar, 2007). The theme of *being a guide dog owner* brought into perspective the amount of time one must dedicate to guide dogs as well as being physically able to train, exercise, and perform daily care for the dog. Limitations of guide dogs included physical challenges, such as keeping the dog in control during walks and restraining it from jumping on others. A guide dog's distractibility was also a common experience among some participants that

decreased the guide dog owner's sense of safety. In certain situations, some participants refrained from bringing their guide dogs with them and opted to use a sighted guide. The findings of this study support previous research outlining the physical responsibilities of dog guide ownership (Camp, 2001). However, these cases were usually limited to environmental and contextual factors which involved avoiding confined spaces, extremely loud events, or other dogs known for disruptive behavior.

Older adults who have never owned dogs before may find negative dog behaviors intimidating or find themselves unable to control the guide dog if they are matched with one that pulls on the harness or is easily distracted during walks. A guide dog's distractibility could have negative implications, such as decreased engagement in meaningful occupations and community mobility due to the older adult's avoidance behavior because of a distracted dog. Possible recommendations for guide dog organizations may include working with the guide dogs to control distracting behavior and assessing if the older adult has the physical ability to control a guide dog's undesired behavior. Guide dog organizations could provide extended sessions or virtual support remotely for older adults to provide further obedience training, handling skills, and other supplemental materials to address guide dog's distractibility. Guide dog users who are better equipped with the skill sets and knowledge to correct distractibility may be more inclined to participate in community mobility.

Participants had mixed feelings about new responsibilities of daily care for their guide dog. These findings support current literature that viewed dog waste cleanup as a possible drawback to owning a guide dog (Whitmarsh, 2005). Hence, older adults may avoid obtaining a guide dog altogether due to tasks such as picking up after the dog relieves itself. These findings related to performance capacities that may have future implications on whether a guide dog is



suitable for older adults due to safety concerns. For instance, bending or squatting down to clean up after a guide dog or donning/doffing a harness may be more challenging for older adults who use guide dogs. Overall, due to the natural aging process, older adults may be physically weaker than younger guide dog owners and underestimate the physical responsibilities of handling a 60 to 70 pound dog. To address this limitation, guide dog organizations can provide education and referrals to additional resources such as OTs for older adults to address physical decline associated with low vision and old age.

*Increase in community integration* suggests that the guide dog helped facilitate activities outside of the home, which sometimes would result in interactions and socialization between the guide dog owner and someone they would not have regularly interacted with prior to obtaining the guide dog. These findings suggest that first-time dog guide owners experience psychological and social benefits, such as new friendships, from guide dog ownership and are concurrent with past research (Lane, et al., 1998).

Participants' responses suggest that guide dog ownership led to increased use of transportation, especially at night. A change in perception of safety may attribute to the increase in community integration. Prior to obtaining a guide dog, many participants would not go out at night, especially on public transportation because they did not feel safe to do so. Current literature found that, in general, adults with low vision avoided unfamiliar settings and preferred familiar routes (MacLachlan, et al., 2007). On the contrary, participants in our study described how they traveled further and went to new places as a result of the guide dog. Earlier research also revealed how low vision creates major lifestyle changes for older adults that can lead to greater dependency on caregivers, reduced community involvement, and decreased socialization (Berger & Porell, 2008; Blaylock et al., 2015; Lane et al., 1998). Our study results demonstrated

how guide dog ownership can help combat these negative implications associated with acquired low vision. Particularly, participants observed that more people approached them in the community since using a guide dog.

Moreover, results from this study demonstrated how guide dogs enabled participants to go on leisurely walks, shop, eat at restaurants, and travel via airplane. Participants of this study revealed that they had increased their walking and found it safer to go out at night with their guide dog, supporting current literature findings regarding older adults' avoidance of community mobility due to safety concerns without a guide dog (Blaylock et al., 2015; MacLachlan et al., 2007). Increased feelings of safety and independence to travel outside the home, regardless of time of day, proves to be a major facilitator for older adults considering a guide dog. Results of this study can be used by OTs and guide dog organizations to increase awareness of the benefits to how guide dogs may help older adults regain their social life outside their home.

### **Volition**

Volition, according to Dunbar (2007), is the motivation and values behind why people perform desired occupations. The *human-guide dog bonding* theme highlighted how a guide dog can increase companionship, be an equal partner with the owner in terms of functionality, and provide affection. Our findings also confirm previous study results on how a guide dog not only addresses community mobility but independence and bonding as well (Wiggett-Barnard & Steel, 2008). A sense of companionship may be a motivation for older adults considering guide dogs. Moreover, participants described their relationship with the guide dog as an interdependent one or part of a team. The guide dog and its owner also demonstrate an intimate and reciprocal bond, something not experienced with the long cane.

Current literature highlighted how those with low vision may experience feelings of depression and loneliness (Cimarolli et al., 2012; Kempen et al., 2012). On the contrary, the human-guide dog bonding theme suggests that the guide dog can help with positive feelings towards oneself, others, and the guide dog. Some participants discussed how the guide dog facilitated a calmer mood just by being present. Furthermore, results from this study revealed that a guide dog appears to change the perception of the owner towards more positive thinking. Participants of this study revealed how the bond with the guide dog created a great sense of companionship, support, and trust, thus, confirming findings in current literature (Lane et al., 1998; Whitmarsh, 2005; Wiggett-Barnard & Steel, 2008). Participant's family members also shared a bond with the guide dog, creating a supportive home environment. Overall, most participants felt the bond to be overwhelming in a positive way and they were emotionally attached to the guide dog. Therefore, the human-guide dog bond is another major facilitator found in this study.

*Guide dog enhances autonomy* suggests that after using the guide dog, older adults felt more free and independent in their daily living choices. The guide dog facilitated independence for the older adult, providing options and opportunities that were not there before obtaining a guide dog. Additionally, participants reported feeling more positive, happier, motivated, and proud. Overall, internal feelings were positive and resulted in participants feeling more safe, comfortable, and able to move without fear. These increased feelings of independence and freedom further contribute to findings in current literature (Hersh, 2013; Whitmarsh, 2005). The results of this study highlight how guide dogs offer numerous benefits such as community integration, exercise, companionship and increased social participation. However, the most

significant finding is the feeling of autonomy that guide dogs offer older adults with low vision, yet, another facilitator to guide dog use.

### **Implications for Occupational Therapy**

The findings of this study offer important implications for the field of occupational therapy among older adults with low vision. Specifically, understanding the facilitators and barriers of owning a guide dog for the first time provides valuable insight into the psychosocial and physical concerns needed to be addressed before older adults obtain their first guide dog. Such insight will improve the likelihood of ensuring the optimal fit between the user and the assistive device, such as the guide dogs.

The themes established under the MOHO components of volition, habituation, and performance capacity provide key focus areas specific to the older adult population. One implication for OTs is client education. An OT who is informed on the barriers and facilitators of guide dog ownership can educate future clients on how a guide dog would interact and improve one's life, giving the older adult client autonomy in making an informed decision when choosing the best LVAD, such as a guide dog.

Another implication for the field of OT is habilitation. OTs can create an understanding and awareness to changes in habits, roles, and routines when having a guide dog for older adults. For instance, OTs can facilitate older adult's transition into having a structured schedule based around the guide dog needs. For performance capacity, OTs can provide strategies and additional training to establish more control over the guide dog and make daily care easier. For example, OTs can educate older adults on how and when to perform tasks related to their new guide dog to reduce physical exertion.

Occupational therapists can also help older adults with low vision become aware of the many benefits of guide dog ownership, including emotional support, companionship, and contribution to healthy habits such as daily exercise. The results of this study suggest that participants may have been motivated to obtain a guide dog to explore and increase their participation in activities outside the home. Guide dog ownership provides another benefit of increasing a person's feeling of safety and independence, resulting in more social activities and time spent in the community compared to life before the guide dog. Ultimately, these changes resulted in increased feelings of independence and freedom for the older adults with low vision.

### **Limitations**

Although efforts were made to address the quality and integrity of the data, there were limitations in the study. The four criteria of trustworthiness for qualitative research that was used to identify the limitations was based on Lincoln and Guba's framework. The framework includes transferability, credibility, confirmability, and dependability (Polit & Beck, 2012).

Transferability is the extent in which the findings are applicable to other settings outside the study. Since the participants were recruited solely from GDB organization, the outcomes may not be generalizable to represent the entire population of older adults with low vision who are also first-time guide dog owners.

A second limitation is credibility during the interviewing process. Data collection was based on phone interviews by two designated interviewers. Variations and the skill of the interviewers may have affected the participant's responses. To minimize this limitation, interviewers emphasized the use of good listening skills and avoided interrupting the participants when they spoke. Another limitation is that there may be a potential bias in participants' responses. While participants were reminded that their sharing would remain anonymous after

the phone interview, they may have been subjected to response bias. Possible response bias may have included responses that were not reflective of participants' personal experience with their guide dog, but a positive response that seems "acceptable" to please the researcher. In spite of our efforts to minimize the potential risks by asking follow-up questions and seeking clarification, by the nature of interviewing through a phone call, the participant's social cues such as nonverbal expressions could not be extracted.

For this study, although we attempted to analyze all seven transcripts until we reached 100 percent consensus, there were some limitations to dependability. Reflexive journals were not carried out by the researchers. Instead of using reflexive journals, investigators met weekly to evaluate the accuracy of the data. In addition, member checking was not performed after the interview. Ideally, participants would have had the opportunity to audit their own transcripts for the accuracy of their statements prior to coding. Therefore, this may affect confirmability for the objectivity and neutrality of the data.

### **Future Research**

Future qualitative studies could benefit from a comparison of older adults who are first-time guide dog users either with or without family involvement. For participants who received support from others, interviewing family members may provide a different perspective on the motivation, performance, and psychological changes of older adults with low vision. In this study, participants had their dog for an average of six months and by that time, several may have already reached their initial adjustment periods. Additional interviews from the same participants after two years would provide additional perspective of the older adult population and potentially identify new themes or confirm previously established themes beyond the initial adjustment period. Additionally, since guide dogs retire after reaching 10 years old, a phenomenological

longitudinal study could examine the impacts of the guide dog-owner relationship during the transition to obtaining a second guide dog. Furthermore, our sample solely consisted of participants recruited from GDB organization. Future research should also include participants who have obtained their guide dog from other organizations outside of Guide Dogs for the Blind.

### **Summary and Conclusions**

Having low vision can significantly impact older adults in their independence, psychological health, and ability to participate in daily activities. Similarly, older adults with low vision are at risk for social isolation and depression due to giving up some of their daily activities with the vision loss. Assistive devices such as guide dogs provide older adults with low vision an opportunity to regain some of their daily function out in the community.

The purpose of this study was to bridge the gap in the literature and identify facilitators and barriers impacting first-time guide dog users among older adults with low vision. Five themes emerged from this phenomenological study of older adults who are first-time guide dog users. Overall, results indicated positive psychological effects of using a guide dog among this population. Participant responses revealed increased independence, social participation, community integration, and companionship since obtainment of a guide dog. This study offered significant insight into the positive effects a guide dog can have on an older adult's life. Additionally, the study brought into perspective the amount of time one must dedicate to the guide dog as well as being physically able to train, exercise, and perform daily care. Participants' insight into identification of the facilitators and barriers also help guide dog organizations, such as GDB, to enhance their application and training processes and make it more accessible for older adults.

Moreover, this study contributes to the practice of occupational therapy by providing valuable insight into an older adult's perspective of his or her new life with a guide dog. The MOHO frame of reference helped to contextualize the occupational performance of older adults after obtaining and using a guide dog in relation to their volition, performance capacity, and habituation. The information gained from this study will help OTs in intervention planning related to assistive device matching and injury prevention for older adults using guide dogs.



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**Appendix A: Interview Questions**  
 Research Focus Group Questions For  
 Participants from Guide Dogs for the Blind

**General questions**

1. What eye conditions do you currently have?
2. How long have you had the eye condition?
3. Generally, how would you rate your overall health? For instance, poor, average, excellent?

**MOHO questions**

- Volition
  - a. What prompted you to obtain a guide dog from GDB?
    - Follow up: Did your family or friends influence your decision?
  - b. What were your expectations before getting a guide dog?
- Habituation
  - a. On a personal level, what was the adjustment period like after obtaining your guide dog?
    - Follow up: How long was the adjustment period?
  - b. In what ways have your habits and daily routines changed since getting your guide dog?
    - Follow up: For example, what new habits have you had to learn in order to care for the guide dog?
  - c. How has your family adjusted to the guide dog and giving up certain roles that the dog now helps you with?
- Performance Capacity
  - a. How has a guide dog helped you become more independent since your acquirement of low-vision?
  - b. Physical
    - i. How does a guide dog compare to using the long cane in the home or in the community?
      - Follow up: Which did you find easier to use, long cane or your guide dog? For example, are you able to travel further distances when using one over the other?
    - ii. What opportunities has a guide dog helped you to explore the community?
      - Follow up: Such as work or volunteering in your community?
    - iii. What physical challenges do you have in using a guide dog?
      - Follow up: Holding the harness, does that require more endurance or shoulder strength than the long cane?
  - c. Psychosocial
    - i. How has the guide dog been supportive emotionally? Or not?
    - ii. Have you found that your social circle has changed since you have had the guide dog?
      - Follow up: How? Have you made new friends within your community? How has your social circle expanded?

- iii. What have you noticed in terms of anyone acting differently around you since obtaining your guide dog?
  - Follow up: Did you find people approach you more or less since getting the guide dog?
- GDB
  - a. Are there any barriers for you to receive supportive service from GDB?
    - Follow up Questions: What barriers did you face during the process of contacting GDB?
    - What barriers did you face during the training program of GDB?
    - What barriers did you face upon graduation and after having your guide dog for a while?
  - b. How can GDB organization improve the accessibility for older adults in the future?

**Wrap up question**

Do you have any additional things you'd like to share with us?



## **Appendix B: Consent to Be a Research Subject**

### **DOMINICAN UNIVERSITY OF CALIFORNIA**

#### **CONSENT TO BE A RESEARCH SUBJECT**

##### Purpose and Background

Jeffrey Kou, OTS, Yvonne Lam, OTS, Patricia Lyons, OTS, Susan Nguyen, OTS and Dr. Kitsum Li, Assistant Professor, Department of Occupational Therapy at Dominican University of California, in collaboration with Ms. Theresa Stern from Guide Dogs for the Blind organization in San Rafael, CA, United States, are conducting a research study on the experience of owning of guide dog by older adults with low vision. The purpose of this study is to gain a better understanding of the facilitators and barriers of owning a guide dog as perceived by the owners.

I am being asked to participate in this study because I have recently acquired a guide dog, between three months to one year, from Guide Dogs for the Blind organization and am willing to share my experience of owning a guide dog.

##### Procedures

If I agree to be a participant in this study the following will happen:

1. I will participate in a phone interview that will be audiotaped.
2. I will answer questions in an approximately 60-75 minute phone interview.
3. I understand that specific information from the interview will not be shared with Guide Dogs for the Blind organization. Only aggregate summary will be shared with Guide Dogs for the Blind organization.

##### Risks and/or discomforts

1. I understand I will not be named in the actual study and every effort will be taken to protect my privacy. No identifying information will be used in any reports or publications resulting from the study, and all personal references will be eliminated when the data are transcribed.
2. I understand that I have the right to refuse to answer certain questions if I experience discomfort and may stop the interview at any point.
3. I understand that I may withdraw from the study at any point without affecting my relationship with Guide Dogs for the Blind organization.

##### Benefits

There may be no direct benefit to me from participating in this study. The anticipated benefit of this study is a better understanding of facilitators or barriers of owning of a guide dog and to better enhance Guide Dogs for the Blind organization and to support future adults obtaining a guide dog.

##### Costs/Financial Considerations

There will be no costs to me as a result of taking part in this study.

Payment/Reimbursement

I will be reimbursed with a small gift card that I will receive upon completion of the study in Fall 2017.

Questions

I have discussed any questions I have with the student researchers, via email [guidedogscapstone@gmail.com](mailto:guidedogscapstone@gmail.com) or telephone inquiry (415-458-3753) regarding my participation in the study and have received informative, timely answers. If I have any further questions or comments about participation in this study, I should first talk with the student researchers. If I do not get satisfactory answers, I may also reach Dr. Kitsum Li at (415) 458-3753.

Consent

I have been given a copy of this consent form, signed and dated, to keep. PARTICIPATION IN RESEARCH IS VOLUNTARY. I am able to decline to be in this study, or to withdraw participation at any point without affecting my relationship with Guide Dogs for the Blind organization. My signature below indicates that I agree to participate in this study. All procedures related to this research study have been satisfactorily explained to me prior to my voluntary election to participate.

I HAVE READ AND UNDERSTOOD ALL OF THE ABOVE EXPLANATIONS REGARDING THIS STUDY. I VOLUNTARILY GIVE MY CONSENT TO PARTICIPATE. A COPY OF THIS FORM HAS BEEN GIVEN TO ME FOR MY FUTURE REFERENCE.

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Printed Name of Subject

---

Date

---

Signature of Subject

---

Date

## Appendix C: Confidentiality Form

### DOMINICAN UNIVERSITY of CALIFORNIA CONFIDENTIALITY AGREEMENT FOR HUMAN SUBJECT RESEARCH ASSISTANTS



#### Confidentiality Agreement for Human Subject Research Assistants

Human subject research includes confidential and personal matters, some of which may involve a subject's rights of privacy protected by law, attorney-client privileged communications, and proprietary information. I agree to maintain confidentiality with respect to any private or personal information that I become aware of, or have access to, during the course of my activity as a research assistant. In providing support to the research project, I am considered a "confidential employee." I am prohibited from releasing information to or discussing information with anyone not employed in this specific research project, except as I am directed by the primary investigator or as is necessary in the ordinary course of performing my duties in the research activity.

I agree to maintain confidentiality of these matters while I am working on the research project and following the completion of my work association on this activity.

At all times during my participation, I shall promptly advise the primary investigator of any knowledge that I may have of any unauthorized release or use of confidential or personal information, and shall take reasonable measures to prevent unauthorized persons from having access to, obtaining, or being furnished with any such information.

Print Name: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

The policies were explained to me by:

\_\_\_\_\_

Name

\_\_\_\_\_

Title

## **Appendix D: Research Participant's Bill of Rights**

### **DOMINICAN UNIVERSITY of CALIFORNIA**

#### **RESEARCH PARTICIPANT'S BILL OF RIGHTS**

Every person who is asked to be in a research study has the following rights:

1. To be told what the study is trying to find out;
2. To be told what will happen in the study and whether any of the procedures, drugs or devices are different from what would be used in standard practice;
3. To be told about important risks, side effects or discomforts of the things that will happen to her/him;
4. To be told if s/he can expect any benefit from participating and, if so, what the benefits might be;
5. To be told what other choices she/he has and how they may be better or worse than being in the study;
6. To be allowed to ask any questions concerning the study both before agreeing to be involved and during the course of the study;
7. To be told what sort of medical treatment is available if any complications arise;
8. To refuse to participate at all before or after the study is stated without any adverse effects. If such a decision is made, it will not affect his/her rights to receive the care or privileges expected if s/he were not in the study.
9. To receive a copy of the signed and dated consent form;
10. To be free of pressure when considering whether s/he wishes to agree to be in the study.

If you have other questions regarding the research study, you can contact the student researchers Jeffrey Kou, Yvonne Lam, Patsy Lyons, Susan Nguyen or their advisor Dr. Kitsum Li, at (415) 458-3753. You may also contact The Dominican University of California Institutional Review Board for the Protection of Human Subjects by telephoning the Office of Academic Affairs at (415) 257-0168 or by writing to the Associate Vice President for Academic Affairs, Dominican University of California, 50 Acacia Avenue, San Rafael, CA. 94901.

### Appendix E: Permission to Conduct a Research Study

Theresa Stern  
11/21/2016  
P.O. Box 151200  
San Rafael, CA 94915

Re: Permission to conduct a research study

We, Jeffrey Kou, Patricia Lyons, Susan Nguyen, and Yvonne Lam, are writing to request permission to conduct a research study at Guide Dogs for the Blind organization. We are currently enrolled in the Masters of Science in Occupational Therapy at Dominican University of California in San Rafael, CA, and this study is our Capstone Project as part of the fulfillment for the program. The purpose of this study is to explore the facilitators and barriers of having a guide dog as experienced by older adults with low vision participating in Guide Dogs for the Blind organization. Our capstone project is under the guidance of our advisor, Dr. Kitsum Li, assistant professor.

After approval from the Institutional Review Board, we hope to recruit up to eight participants, both men and women, who are over the age of 55 with acquired low-vision and are first time guide dog users in the early stage (3 months to 1 year of guide dog use). Upon your approval, we will supply a recruitment letter for you to email to your members who qualify as early stage guide dog users. In addition, you may also refer potential members who meet the inclusion criteria. Participants who express interest in the study will be given a consent form to sign and will receive a participant's Bill of Rights. The participants will be interviewed over the phone for approximately 60-75 minutes. Format of the interview will be semi-structured questions, which will provide an opportunity to explore emerging themes. The participants will have the right to refuse to answer any questions and/or stop the interview at any time. The results from the study will be reported to you by December 2017.

If approval is granted, we are hoping to interview the eight participants in February or March. An approval to conduct this study will be greatly appreciated. We will be happy to answer any questions that you have at this time. You may contact us at either [guidedogscapstone@gmail.com](mailto:guidedogscapstone@gmail.com) or our faculty advisor, Dr. Kitsum Li ([kitsum.li@dominican.edu](mailto:kitsum.li@dominican.edu)).

Sincerely,  
Jeffrey Kou, OTS  
Yvonne Lam, OTS  
Patricia Lyons, OTS  
Susan Nguyen, OTS and  
Dr. Kitsum Li, OTR/L, Capstone Advisor, Dominican University of California

I agree with the above request,

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Signature

---

Date

## Appendix F: E-Mail Recruitment Letter

Dear Potential Participant,

We, Jeffrey Kou, Patricia Lyons, Susan Nguyen, and Yvonne Lam of Dominican University of California, are requesting your voluntary participation in a research study. The study will explore facilitators and barriers of using a guide dog as experienced by older adults with low vision. You have been selected due to your affiliation with Guide Dogs for the Blind (GDB) organization in San Rafael, CA. Your personal experience will benefit other guide dog users and contribute to improvements made within the GDB organization such as training, service delivery, and support systems. We ask that you participate in a 60-75 minute phone interview, which will be recorded. Your answers will remain completely anonymous and any identifying information, such as your name, will be removed during the transcription process. It is the student researcher's intention that you will not encounter any outside costs while being interviewed. At the conclusion of the study in Fall 2017, a small token in the form of a gift card will be mailed to you.

If you are interested in participating in the interview, please respond to this email. Please write "research interview" in the subject line of the email & include your name, address, date of birth & phone number in the body of the email. You will be contacted by a student researcher by e-mail: [guidedogscapstone@gmail.com](mailto:guidedogscapstone@gmail.com) which will be password protected to ensure privacy.

If you have further questions about the research study, you may contact us at (415) 458-3753. You may also contact the Dominican University of California Institutional Review Board for the Protection of Human Subjects (IRBPHS), which is concerned with the protection of all volunteers in research studies. You may reach the IRBPHS office by calling (415) 257-0168 and leaving a voicemail message or FAX inquiries to (415) 458-3755. You may also write to the IRBPHS by mailing questions to:

IRBPHS  
Office of Associate Vice President for Academic Affairs,  
Dominican University of California  
50 Acacia Ave, San Rafael, CA 94901.

Participation in this research study is voluntary. You are free to decline participation or withdraw from the research study at any point. Thank you in advance for your participation.

Sincerely,  
Jeffrey Kou, OTS  
Yvonne Lam, OTS  
Patricia Lyons, OTS  
Susan Nguyen, OTS and  
Dr. Kitsum Li, OTR/L, Capstone Advisor.  
Department of Occupational Therapy  
Dominican University of California

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Electronic Signature

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Date