UNIVERSITY *of* INDIANAPOLIS®

School of Occupational Therapy

Developing an Evidence-Based Training Manual on Vision Loss for Healthcare Providers and Caregivers

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A capstone project submitted in partial fulfillment for the requirements of the Doctor of Occupational Therapy degree from the University of Indianapolis, School of Occupational Therapy.

Under the direction of the faculty capstone advisor:

Name, title

A Capstone Project Entitled

Developing an Evidence-Based Training Manual on Vision Loss for Healthcare Providers and Caregivers

Submitted to the School of Occupational Therapy at University of Indianapolis in partial fulfillment for the requirements of the Doctor of Occupational Therapy degree.

By

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ABSTRACT

Vision loss is a common condition found in the aging population; however, it can often be dismissed. The purpose of this doctoral capstone experience was to develop an educational resource on vision loss to enhance the knowledge and confidence of healthcare providers and caregivers working with individuals with low vision or who are blind, specifically in senior-based living facilities. In order to determine project specifics and needs, a low vision survey was created. The results of the survey provided areas to focus on within educational materials to enhance overall vision loss knowledge. Following creation and implementation of the vision loss training manual, a post-satisfaction survey was provided to staff. Results showed an overall increase in vision loss knowledge in the areas of eye conditions, adaptations, and technology. Additionally, staff were very likely to use this training manual in practice, or to provide it to another healthcare provider or caregiver.

INTRODUCTION

Bosma Enterprises is one of the Midwest's largest nonprofit organizations and has been providing employment and training for individuals who are blind or visually impaired for over 100 years. They operate three individualized, mission-driven brands including: Bosma Enterprises, Bosma Center for Visionary Solutions and Bosma Visionary Opportunities Foundation. Bosma's mission is to create opportunities for individuals who are blind or visually impaired and their vision is equality for people who are blind or visually impaired (Bosma Enterprises, 2021).

Bosma Enterprises is their business entity that partners with socially responsible companies that focus on supplier diversity. These partnerships create jobs for individuals with vision loss and help to expand sourcing options to companies with high-quality goods and services. Additionally, Bosma Center for Visionary Solutions serves many clients throughout the state of Indiana through personalized programs that can include counseling, job placement, and training for daily living skills to help adults gain life skills they need to remain independent (Bosma Enterprises, 2021). There is hope that with increased advocacy of the services and education that Bosma Enterprises provides on low vision and blindness, that more individuals and local facilities will become aware of such services and the need to address visual deficits.

Low vision is a prevalent condition within the aging population; however, due to a lack of education, training, and confidence it is often dismissed by caregivers. Therefore, the purpose of this doctoral capstone project was to develop a low vision training manual and provide education based on this manual. Such resources could be provided to local long-term care facilities or community members to also increase the awareness of Bosma Enterprises and advocate for low vision and blindness needs. With the use of educational resources and Bosma

Enterprises' staff, I hope to have increased the awareness of Bosma Enterprises services and education on low vison and blindness to improve many individuals' overall quality of life.

BACKGROUND

With the increasing age of the global population, the rates of visual disabilities and vision loss are increasing (Sahli & Idil, 2019). Ranking in behind arthritis and heart disease, low vision is the most common chronic condition that is prevalent in older adults (Reed-Jones et. Al, 2013). Additionally, the prevalence of low vision increases with age, from 1% of individuals in their late 60s to 17% of individuals aged 80 and older (National Eye Institute [NEI], 2019). Kaldenberg & Smallfield (2020) share that typical aging does not cause vision loss, however there are four main causes of low vision that can be directly related to the aging process. These include age-related macular degeneration, diabetic retinopathy, glaucoma, and cataracts (Kaldenberg & Smallfield, 2020). Therefore, it is essential that not only occupational therapy practitioners, but all healthcare workers and caregivers have the skillsets to address low vision needs.

It is estimated that 2.2 billion people are visually impaired worldwide and because age-related vision loss is a primary cause of vision impairment, that number is only projected to rise with increases in the average lifespan (Demmin & Silverstein, 2020). They share that vision loss often results in significant disability and can be associated with a great economic burden, decreased quality of life, concurrent medical issues, and mental health problems. There is data that shows the rates of depression and anxiety are elevated among people with visual impairments. The CDC (2021) shares that one in four adults with vision loss reports anxiety or depression. Furthermore, Demmin & Silverstein (2020) found that in order to improve outcomes and to have a better understanding of the mechanisms associating visual impairments and poor

mental health, more education on low vision and blindness resources and adaptations is needed. An essential aspect of this is to develop more effective educational interventions and to expand access to services to improve the treatment of mental health problems in this population. Elliott et al. (2013) examined rates of visual impairments of older adults in assisted living facilities, which was the first study of its kind to provide information for understanding the scope of vision impairment problems in this population. Assessments included those of visual acuity, cognitive status, and presence of eye conditions. Through the vision screening program, it was identified that 70% of assisted living facility residents have vision impairments either for distance or near visual acuity, and 90% have contrast sensitivity. They found that prior research has documented the rate of vision impairments among nursing home residents to be greatly accentuated when compared to older adults who are living independently in the community. A cross-sectional study looked at the statistical analysis of comprehensive eye examination records of nursing home residents (Anderson et al., 2020). Findings showed that the overall prevalence rates of moderate-to-severe vision impairments and blindness were 47%. It was found that the high prevalence of vision loss among nursing home residents indicates a demand for further data collection on evidence about vision loss among nursing home residents at a national level (Anderson et al., 2020).

Meehan & Shura (n.d.) explored a qualitative study to better understand the impacts of care and overall quality of life in long-term care settings from visual health. It was found through semi-structured interviews with residents of long-term facilities that vision impairments are often 'unseen' and overlooked. Vision impairments are a critical aspect of health that requires appropriate care for improving quality of life. Many of the facilities residents reported an impact of their vision on their daily life and that coping strategies were rarely discussed causing

implications for a lack of adaptations for individuals provided by caregivers and long-term care facility staff (Meehan & Shura, n.d.).

Occupational therapy practitioners can help individuals with low vision to function at their highest level of independence by teaching new skills and modifying the task or environment. Kaldenberg and Smallfield (2020) share that the aging population is generating an increased demand for occupational therapists to address occupational performance with those who are experiencing low vision or blindness deficits. Older adults with visual impairments are three to four times more likely than adults with normal vision to experience difficulties completing instrumental activities of daily living (American Occupational Therapy Association, n.d.). Kaldenberg and Smallfield (2020) found strong evidence that supports the role of occupational therapy for adults with low vision to participate in low vision rehabilitation for ADL and IADL impairments through client-centered problem-solving training. This works to enhance an individual's overall ADL and IADL performance. Additionally, a systematic review was completed on interventions for older adults with low vision that can serve as a reference for occupational therapy practitioners to guide best practice and justify occupational therapy services to external stakeholders. Such interventions included performance of activities of daily living and instrumental activities of daily living, reading, and leisure or social participation. Campion et al., 2010 share that while response rates to online surveys can be variable, they were able to determine that there are low confidence levels among therapists assessing and giving advice to those with vison loss. This study showed the need for the development of appropriate vision loss education and training for those working with individuals with vision loss.

Through an in-depth needs assessment, it was determined that Bosma Enterprises will benefit from an educational training manual to provide to providers at long-term care facilities or

community members. Through a semi-structured survey provided to staff at Bosma Enterprises, and review of literature, a training manual was created. A post survey was then provided to provide outcome measures and satisfaction results. Such resources will increase the awareness of Bosma Enterprises and continue to advocate for vision loss needs to improve awareness and quality of life for those with vision loss while also providing Bosma with a tangible resource. Addressing this gap in knowledge and services for low vision leads to the purpose of this capstone project, which was to develop a vision loss training manual to increase awareness of care for individuals with low vision or who are blind.

Model

The theoretical model that I chose to guide my doctoral capstone experience (DCE) is the Person-Environment-Occupational-Performance Model (PEOP). I chose this model because it places a focus on occupations and occupational engagement. Furthermore, this model considers the many dimensions that make up an occupation and the factors that are currently influencing an individual's performance of this occupation (Baum & Christiansen, 2015). Vision loss is a common condition found in the aging population, and these rates of visual disabilities and vision loss are only expected to increase (Sahli & Idil, 2019). This model helped to investigate internal and external factors affecting their ability to engage in occupations, due to vision loss, and work to increase performance ability through changes in the environment (Baum & Christiansen, 2015). Because this model is very client-centered, it will help to work through motivation of an individual's desire to perform an activity and allow increased engagement in occupations. This model assisted in planning and developing a successful and beneficial training manual that offers ideas to increase occupational engagement.

Theory

The theory that I chose to guide my doctoral capstone experience (DCE) is the Activity Theory of Aging which is a part of the Lifespan (Developmental) frame of reference. This theory uses a holistic approach to allow for greater continued engagement that leads to greater life satisfaction (Cole & Tufano, 2008). The training manual that was created offers adaptations and adaptive equipment to assist with engagement in ADL and IADL tasks. The Activity Theory of Aging guided development my training manual based on client based, age-appropriate, and adaptive engagement opportunities.

PROJECT

Following discussion with the site mentor, a review of literature, and the implementation of a low vision survey, it was evident that there was a need for a low vision training manual and educational opportunities that could be provided by Bosma Enterprises. The goal of this project was for Bosma to have a tangible resource that helps to increase healthcare providers and caregiver knowledge and confidence in providing care for those with low vision. The project suggestion was created based on overall site need and both my site mentor and I agreed with project ideas.

Development of the project took place over several weeks. During this time, an in-depth needs assessment with the site mentor was completed that allowed for identification of a greater sense of direction with the project. The next step was identifying gaps in my knowledge of vision loss and care for those with low vision. My site mentor provided me with various evidence-based practice resources, and I spent time doing personal education through continuing education courses.

The project development began with the creation of a pre- and post-survey, based on a 5-point Likert scale, that was given to staff at Bosma Enterprises. Campion et al., 2010 implemented a similar survey regarding confidence and knowledge when working with individuals with vision loss, which I used as a guide when creating my survey. The pre-survey addressed perception of knowledge and confidence with various aspects of vision loss and any topics that the respondent felt would be beneficial to include in a training manual. Similarly, the post-survey addressed confidence with various aspects of vision loss, following reading through the training manual, and addressed satisfaction of the overall results of the manual.

Based on previous literature and educational resources that I found; I then created a training manual for vision loss. The goal of creating this training manual was to provide Bosma Enterprises with a tangible resource, that they can then use for educational training purposes in the community and to advocate for those with vision loss. The training manual includes an overview of vision loss, conditions that can cause loss of vision or blindness, types of vison loss, safety, tips for working with those who have vision loss, adaptations/adaptive equipment, leisure activities, technology, and extra resources and services provided to those with vision loss. Information included in the training manual was based on results of the pre-survey and Kaldenberg and Smallfield's (2020) findings that professional development in the area of low vision practice should include the following topics: knowledge on health conditions and changes that influence visual function, information on the visual system, influences on occupation and the environment, exposure to potential members of a vision rehabilitation team, information on assessment tools, and knowledge about the influence of low vision diagnoses and outcomes.

Limitations of the study included the small sample size for both the pre- and post-survey responses. The pre- and post-survey questions could also have interpretation bias of the

questions. In the beginning implementation phases, the goal of the DCE project was to provide

the pre- and post-survey to healthcare providers and caregivers at community based senior living

facilities. The goal of the project was to create a training manual and educational presentation

that was feasible for Bosma to provide to local facilities, that would in turn increase knowledge

on Bosma Enterprises and knowledge on caring for those with vision loss. Due to many of the

senior based facilities having COVID-19 restrictions and a lack of interest or willingness to

participate, this was unable to be completed; however, it is a goal for future implementation that

Bosma will be able to provide the training manual and educational resources to such facilities in

order to increase awareness.

PROJECT OUTCOMES

In order to determine the results and success of the capstone project and training manual

that was created, a pre-post descriptive survey was created through Qualtrics and sent to staff via

email. The pre-survey was implemented prior to creation of the training manual and assessed

overall understanding of confidence ratings on various aspects of low vision. Additionally, the

survey offered the opportunity to include any other topics that was seen as beneficial to include

in a training manual. Results of the pre-survey guided creation of the training manual and topics

that were included. The post survey was emailed to staff the same day they received the vision

loss training manual. Instructions were provided to review the training manual prior to

completing the survey. It should be noted that 9 staff members completed the initial survey,

while only 6 completed the post survey.

Each question asked the respondent to rate their agreement from strongly disagree to

strongly agree, based on a 5-point Likert scale. Additionally, the post-survey asked the

respondent to rate their satisfaction and likeliness to use the training manual on a 5-point scale.

After analyzing results of the pre and post survey outcomes, the success of the training manual

and capstone project was evident and can be seen in Table 1 and 2.

Table 1.

Statement	Pre-Rating (*n=9*)	Post-Rating (*n=6*)	Change
1. I am confident in my knowledge regarding low vision.	2.2	4.6	2.2
2. I am confident in my knowledge on low vision adaptive aids and adaptations that can be made.	3.6	4.8	1.2
3. I am confident in my knowledge on eye conditions/diseases and how they may affect vision.	2.2	4.6	2.4
4. I am confident in my knowledge on technology that is available to individuals with vision loss.	3.0	4.0	1.0

Table 2.

Post-Survey Statement	Rating (*n=6*)
1. I am satisfied with the materials included in the training manual.	4.8
2. I am likely to use this training manual as a resource, or to provide it to someone.	4.8

Table 1 shows the increased ratings in confidence and knowledge levels with various

topics of vision loss. Table 2 shows the reported satisfaction on the outcome of the training

manual. Based on the findings of Table 1 and 2, there is a positive correlation between the

creation and implementation of the vision loss training manual and confidence/knowledge levels

of individuals working with those who have low vision or are blind. Long-term success of the

implementation of the training manual was not measured during the 14-week doctoral capstone

experience.

SUMMARY

Based on prior literature, it is evident that vision loss is a common condition, especially within the aging population. There is a gap in education and training provided to healthcare providers working in senior living facilities and caregivers providing care to individuals with vision loss, causing a dismissal of needs. Bosma Enterprises works to close this gap in care by providing low vision services to those in the community at no cost. However, once they have exhausted their services they can provide for an individual, there is no continuation of knowledge or services provided. The goal of this doctoral capstone experience was to create a tangible resource for Bosma that they can then provide to individuals facing vision loss, caregivers working with these individuals or even healthcare providers. A pre and post survey based on a 5-point Likert scale was provided to staff at Bosma. The pre survey addressed confidence on various aspects of low vision and what they felt would be beneficial to a training manual. Based on results of the survey, the capstone student gathered evidence-based materials to create the resource. This training manual works to address the gap between Bosma's services and what next steps an individual can take to continue care for their needs. Based on the results of this study it was shown to be beneficial in increasing the knowledge of Bosma staff, and all reported they were very likely to provide this resource to someone they are working with or presenting to in the future. Results of the pre-survey showed that staff ranked their confidence on overall knowledge of vision loss at a 2.2 out of 5, knowledge on eye conditions at a 3.4, use of adaptive aids at 3.6 and technology for vision loss at 3.0. Post-survey results, following reading the training manual that was created, showed an increase in overall confidence and knowledge with ratings of 4.6, 4.2, 4.8, and 4.0, respectively.

CONCLUSION

Vision loss is a common condition, especially within the aging population (Sahli & Idil, 2019). There is a gap in education and training provided to healthcare providers working in senior living facilities and caregivers providing care to individuals with vision loss, causing a dismissal of needs. Bosma Enterprises works to close this gap in care, by providing low vision services to those in the community at no cost. However, once they have exhausted their services they can provide for an individual, there is no continuation of knowledge or services provided.

The goal of this doctoral capstone experience was to create a tangible resource for Bosma, that they can then provide to individuals facing vision loss, caregivers working with these individuals or even healthcare providers. This training manual works to address the gap between Bosma's services and what next steps an individual can take to continue care for their needs. Based on the results of this study it was shown to be beneficial in increasing the knowledge of Bosma staff, and all reported they were very likely to provide this resource to someone they are working with or presenting to in the future.

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Appendix A

Training Manual PDF

https://drive.google.com/file/d/1k1z04Q9H69GmWz17DjAQz6btvBmhD34c/view?usp=sharing

Appendix B

Doctoral Capstone Experience and Project Weekly Planning Guide

Week	DCE Stage (orientation, screening/evaluation, implementation, discontinuation, dissemination)	Weekly Goal	Objectives	Tasks	Date complete
1	**Orientation – Remote** **Screening/Evaluation**	Become oriented to site's website and available materials Introduce project to staff during meetings Create general plan for project Finalize MOU Complete Needs Assessment by end of week	Meet with site mentor and IRT staff Identify needs for project Develop and complete needs assessment	Discuss project during IRT meeting and weekly Monday meetings with site mentor Gain more resources from site (Teaching Plan, Order Forms, IRT form, Training Manual) Obtain necessary information for site and their needs with my project	1/10 1/13 1/10-1/14 1/13
2	**Screening/Evaluation**	Complete literature search to update literature review and methods Develop pretest measure outcomes	Update literature based on needs for project and project goals Determine format of outcome measurements,	Research more specific literature on needs revolving low vision education Research similar studies with pre/post test	1/17-1/21 1/18

			number of questions, specific language use	outcome measures Look at textbooks to help determine	1/19
		Create connections with outside facility for project participation	Reach out to contacts provided	Staff members that have connections with site will reach out to see if interested in participating in study – met with staff members to discuss needs with this	
3	**Screening/Evaluation Develop**	Develop pre and posttest measure outcomes	Determine format of outcome measurements, number of questions, specific language use	Research similar studies with pre/post test outcome measures Look at textbooks to help determine Create survey on Qualtrics	1/24 1/24-1/28
		Develop resources for training manual	Determine content included in different parts of training manual based on current teaching plans and research on content	Meeting with site mentor to review through teaching plans and ideas with each section	1/25
		Connect with outside facility on project	Email Barb (Activity Director)	Site mentor has connection with activities director at local ALF – provided with	

				contact info and sent email about interest/potential for participating in study/other info	
4	**Screening/Evaluation Develop**	Develop resources for training manual	Determine content included in different parts of training manual based on current teaching plans and research on content	Meeting with site mentor to review through more of the teaching plans and ideas with each section Created specific "chapters" for training manual	1/31-2/4

2/1-2/2 |
| | | Work to find site to participate in project | Reach out to outside facilities on participation again - different forms of communication | Follow up with staff on connecting with outside facilities for participation in project – had no success/responses so far – trying different forms of communication | |
| 5 | **Develop** | Develop resources for training manual | Determine content included in different parts of training manual based on current teaching plans and literature – start layout of training manual | Began researching literature, visuals and information to include in training manual based on each section being included Found layout for training manual online | 2/7-2/11

2/9 |

		Re-assess feasibility of project	Discuss with site mentor and develop new plan and goals	Haven't received responses back from any outside facilities willing to participate in project – reassessing goals and plans to fit needs of project with similar purpose	
6	**Orientation/Shadowing – In Person**	Become oriented to site in person and roles of staff	In person orientation

Meet with staff | Completed in person orientation and met with all staff members working in-person. | 2/14

2/14

2/15-2/16 |
| | | In home visits with IRT staff | Shadow with staff in in-home visits | Completed in home IRT visits | 2/17 |
| | | Shadow vision rehab program | Shadow with staff and participants in vision rehab program | Completed shadowing with participants that are part of the in vision rehab program | |
| 7 | **Develop** | Develop resources for training manual | Determine content included in different parts of training manual based on current teaching plans | Finalized plan for different sections of training manual and information to include | 2/21-2/25

2/24 |
| | | Meet with new staff of Bosma | Conversation about needs – informal needs assessment and re-assessing goals | Discussion of new project direction and how to still meet needs of project and site | 2/21-2/23

2/24 |

			In home visits with IRT staff	Shadow with staff in in-home visits	Completed in home IRT visits	
			Re-create pre-survey	Re-design pre-survey to fit new needs of project and plan	Created new pre-survey based on new project direction and goals	
8		**Develop**	Send pre-survey to staff	Send link of pre-survey to staff with explanation	Survey to staff will assess needs and wants with training manual – opportunity to include any other ideas or info	2/28
			Rough draft of training manual	Complete an informal draft of training – have ideas for each section and further questions prepared	Information draft of training manual was created – outline of all information also created	3/2
			Present rough draft to staff and receive feedback	Presented rough draft of training manual to staff during empower meeting – received feedback verbally and via email	Presented rough draft of training manual and outline of info – received feedback from staff on other info to include/things to change	3/3
			Empower and lead meeting	Participated in all day empower and leadership meeting with IRT staff and site mentor	Participated in an empowerment and leadership meeting with site mentor and IRT staff	3/3

9	**Develop**	Develop resources for training manual	Determine content included in different parts of training manual based on current teaching plans	Determined all content, visuals, and charts that could be included in training manual Finished final rough draft	3/7-3/11
10	**Implementation** **Development – Side Project**	Final review with site mentor	Meet with site mentor for review of training manual	Site mentor provided feedback with several minor changes to make to training manual	3/14-3/18 3/14-3/18
		Creating resources for side project	Determine needs with sensory garden side project	Found several additional grant opportunities for items needed with sensory garden Developed a needs list to complete beneficial sensory garden	
11	**Implementation** **Development – Side Project**	Final review with staff and presented materials to staff	Meet with site mentor and IRT staff to review training manual – presented final product and discussed various uses	Site mentor and IRT staff provided final feedback for any minor changes Presented final product and facilitated conversation about potential uses with training manual	3/21-3/25 3/21-3/25
		Creating resources for side project	Determine needs with sensory garden side project	Created educational resources on information with sensory gardens for low vision	

				(what to include, adaptive techniques, ways to build/create garden, safety, etc.)	
12	**Discontinuation**	Develop post-test outcome measures Begin to analyze data	Developed post-survey, reviewed questions and sent to staff with explanation Begin to determine and analyze outcome measures from survey results	Created post-survey for satisfaction results and outcome measures Sent to staff with explanation Began to review and analyze outcome measures and project satisfaction	3/30 3/31
13	**Discontinuation / Dissemination**	Prepare to disseminate to facility Disseminate Project	Prepare presentation Complete dissemination presentation with all staff and receive more feedback on project	Prepared presentation for dissemination Created PowerPoint and VoiceThread for those who couldn't attend dissemination Completed dissemination to several staff members Facilitated conversation to receive more feedback and satisfaction on project	4/6 4/7
14	**Dissemination**	Review Dissemination	Review through dissemination	Reviewed through final products and dissemination	4/12

			with site mentor	process with site mentor	4/14
		Address any final needs	Review through any final needs and outcomes	Facilitated conversation on any final needs, outcomes and requirements of DCE experience	