

**WNC Falls Prevention Coalition: Assessment of Effectiveness of  
Community Outreach Through Building Better Balance Screenings  
in Reducing Falls and Fall Associated Injuries Among Adults in  
WNC**

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**ABSTRACT**

During the Fall semester of 2013 a community outreach project was done with WNC Falls Prevention Coalition to assist in achieving their mission to reduce the number of falls and fall-related injuries in Western North Carolina. Building Better Balance Screenings (BBB Screenings) are offered at some events to screen participants for fall risk and offer them community resources. Data was entered from BBB screenings that were held during the Falls Prevention Week in September 2013. Assimilation of this data will be the first step in analyzing the success and need of BBB screenings in achieving the goals and mission of the WNC Falls Prevention Coalition. The student gained first hand insight and knowledge of the role of professional organizations in broadening community awareness about fall risk and in implementing effective prevention plans by becoming certified as a BBB screener, conducting screenings, and analyzing the data.

**Key Words: Falls, injury, prevention, adults, screenings, Western North Carolina**

## **Origins of the Project**

This project originated when I was introduced to community engaged opportunities in HWP 350. We were presented with many organizations to choose to work with. After seeing the negative impact that fall injuries had on a family member, I realized that falls among adults is an issue that needs to be addressed. I saw flyers that advertised the opportunity to become certified as a Building Better Balance Screener. By signing up to become a BBB screener, I was introduced to the WNC Falls Prevention Coalition. After I attended a three hour workshop and passed a skills assessment I was a certified BBB Screener, and I was eligible to start volunteering at events to conduct the BBB screenings. While conducting the screenings, I became interested in learning more about what communities can do to create awareness and what resources are available to people that are found to be at higher risk for falls. I talked to Rebecca Chaplin, the director of the WNC Fall Prevention Coalition to see if there was anything I could do to help out and learn more. Rebecca said that I could be most helpful by entering the data that they had collected at BBB screening events for further analysis. I accepted this opportunity to learn more about the WNC Falls Prevention Coalition and our community. I continued to conduct screenings and began to enter data to assimilate for assessment of the success of such interventions in the prevention of falls and fall- related injuries and in reaching the community affected by falls.

## **Methods and Work Undertaken**

The first step to working with this community organization was to become certified as a BBB screener. The opportunity to become a certified BBB screener is in August and September each year before the annual Falls Prevention Week. Becoming a certified BBB screener required attending a 3-hour training session. The training session was followed by an assessment which had to be completed successfully to verify knowledge and correct implementation of screenings. The next step in the project was to work at BBB screenings throughout the community. Building Better Balance Screenings are conducted to screen individuals identified as having an increased risk for falls. The screening consists of 3 questions asked to the participant: 1.) Have you fallen in the past 12 months? 2.) Were you injured? 3.) Do you have problems with walking or balance? The participant is then asked to perform a Timed Up and Go (TUG). TUG or "Up and Go" is a screening method that is uniform and scripted. Data suggest that the timed "Up & Go" test is a reliable and valid test for quantifying functional mobility that may also be useful in following clinical change over time as well as predicting the likelihood of a fall amongst adults that have not been previously identified as at risk. TUG screening is useful because it is quick and doesn't require special equipment (Bruyere et al, 2005, Brauer et al, 2000). The participants start off sitting in a chair with arms. A piece of tape is place on the floor at 10 meters away from the chair. The participant is asked to stand up when indicated and to then walk across the line of tape at their normal pace and then turn around and walk back at their normal pace and sit back down. The screener times with a stop watch from the time that the screener announces "Go" to the time the participant returns to a seated position. At the BBB Screenings, a participant is assessed as at higher risk if they answer yes to any of the 3 questions described earlier and/or complete the TUG in 12 seconds or more. Once the screening is complete, the results are told to the participant and they are presented a form to take to their physician for further assessment as

well as a list of community resources. These resources include physicians, classes such as Tai Chi, and home safety assessments.

After conducting screenings, I met with Rebecca to talk more about the organization and my project details. She gave me the collected data and made the Google doc's data site available to me. Rebecca also directed me to the Land of Sky website to gain more knowledge of the WNC Falls Prevention organization initiative and goals.

My other tasks in this project included entering the data and assimilating the results within the context of scientific research about falls and fall prevention. This research and data assimilation will be a big step in gaining perspective on the success of BBB screenings in reaching the community and preventing falls and reducing fall related injuries.

### **Ties to Academia**

As Biology major at UNCA, knowledge and understanding of the scientific process is thoroughly emphasized. This well-established background of successful scientific study has allowed me to stay on track with the main objectives to protect the validity of the study. I am able to quickly see subjective details that may convolute the results, however may be of great importance in future study. For instance, we would ask participants if they had a problem with balance or walking and could only take into account the yes or no answer. The participant would also talk about contributing factors for loss of balance such as medications or poor vision. These subjective details could be integrated in future screening methods to further pinpoint cause of falls and thus maintain sustainability of the BBB screenings. Another class that has built a strong foundation of health research studies was Pathophysiology of Chronic Diseases and Illness. In this class we completed several critical reviews of published literature to understand biases in research and distinguish between valid and invalid studies.

These standards are prevalent in the protocol and flow chart for the BBB Screenings which offer consistency to protect the validity and integrity of the screenings. I have also studied aspects of service learning and community outreach in HWP 350 Service Learning as well as in HWP 380 Internship. These classes are outside of my intended major, however will be extremely relevant in preparing me for a career in the healthcare field as a nurse. In HWP 350 we learned about factors of poverty that impact an individual's life. It will be necessary to consider the financial hardships which could individual's ability to travel to a BBB screening. It will also be necessary to consider how lower income individuals that are at an increased risk for falls will be able to afford the recommended community resources such as Tai Chi classes and home modifications. In HWP 380 I am completing an internship at Care Partners in the Adult Day Program. Individuals in this program are at higher risk for falls and do fall at the program. This was a real life experience working with community outreach to prevent falls and fall related injuries. This community outreach project directly involves the concepts of health and wellness promotion as well as aspects of preventative health care I intend to complete a bachelor's degree in nursing and hopefully, eventually, a PhD. I will need to understand the scientific and technical aspects of nursing and patient care. I will also need to understand the community and their needs and how they respond to community outreach. In doing research for nursing I will be concentrating on these community needs and how to successfully improve the health and wellbeing of the

members of the community. This project has given me first hand insight and experience with an organization's strategy to first identify a health need for awareness and then bring awareness to the community through education and connection with resources and screenings. The end goal was to successfully decrease the health concern. Specifically, for the WNC Falls Prevention Coalition, this community need was to reduce falls and fall related injuries in older adults. This need was identified by the published information that (stat) are affected by falls a year and that this costs (stat). To reach older adults that may be at an increased risk for falls, events centered on health awareness include BBB screenings. Reviewing data in the following years will show if this community outreach has been successful in reducing falls.

## **Challenges Faced and Responses to those Challenges**

This project was completed in a very short time. The research and the events were happening simultaneously. I had to keep good notes about my experiences at BBB screening events in order to relate them to the research and writing. It was difficult to separate myself from the research while I concentrated on becoming certified to screen and attended screenings. As I entered data, I found it difficult to avoid including subjective categories that would be based on each participant's individual experiences. I would come up with questions to research that were out of the scope of this project. Not having many semesters to conduct more in depth research was frustrating to me at first. I began to see the value of simply learning everything I could about the organization, the people it served and more about falls and fall related injuries. Not jumping into complicated research also freed to take in more from the experience I had at screenings and to gain more insights into the needs of the community.

Since the screening events were all consolidated into a short period of time, it was difficult to participate in as many as I would like. The schedule was tight and sometimes conflicting for face to face meetings and email was the best form of communication. We would also communicate availability to meet by text message. It was helpful however, that my community partner was able to meet me on campus at times to quickly exchange the data. Sometimes, if it was not possible to meet, I could pick up or drop off information with a secretary. I learned that it is possible to work independently on projects and then bring them together as whole. I also learned that my community partner could assist me in my tasks and give me meaningful feedback even if we just had five minutes.

The task of entering data was easy and efficient because the Excel spreadsheet was available as a Google doc's. Google doc's allows multiple users to create, share, and modify documents electronically. Once Rebecca shared the link with me through an email, I was able to access the Google doc's online anytime. Information that I entered into this sheet was immediately saved and viewable by all invited parties. This was very efficient since I did not have to worry about saving the document properly, losing previous work, or uploading and emailing my additions. This also enables any other invited persons to immediately view the modifications and provide feedback. At this point, I began to assimilate the data that was being entered in the context of current research regarding falls and fall related injuries. This was the first step in developing the topics of my writing.

During screenings, we sometimes faced the challenge of insufficient number of volunteers for that particular event. Ideally, a screening would have enough volunteers to have at least one person completing check in/sign in of the participants, one to two screeners, and a person to go over check out and resource information. Additional people may include coaches which watch to verify proper technique and consistency in performing the screenings and balance partners. A balance partners is a volunteer that offers to stay in contact with a participant who wishes to have extra support and guidance in following up with resources. Since, the screening involve volunteers, an event may have as few as two volunteers or as many as seven or eight. This would require us to be flexible and multitask. Doubling up on roles to keep the flow of participants running efficiently was effective. Although we all had different ideas on how to describe the screening, there is a standard protocol to keep each volunteer consistent. Space was an issue at one event since the layout was specific and the same for each table at the health fair. We had to be careful of our step and keep the flow of people organized to keep in a start to finish orientation. There is also a set protocol for the space needed during the TUG (Timed Up and Go) assessment of the screening which we kept protected between our two tables. Participants did complain when asked to place their belongings such as handbags aside or under a chair. A small table between the two screening stations may have been helpful; however, one was not available. I would try to alleviate this anxiety by indicating the short distance of just 10 ft. that they would be during any point during the screening. Sometimes a line would form and some possible participants would not approach the table. We started taking appointments so that people wouldn't have to stand crowded around to wait. This was about 50% effective because half the people did not return for their appointments. This influx of people was concentrated during a short 30 minute time. This problem could be avoided in the future by encouraging volunteers to attend even if they cannot be present for the entire event but may help during the busiest point. I realized this was possible when I wanted to be a screener at an event but had a class starting near the end. I asked Rebecca if I could leave early. This worked out fine and I learned that I could integrate community service into my busy schedule of school and family.

## Results

Quantitative results were made from BBB Screenings that were held on or around the Active Aging Week that was held September 21- September 26 2013. Three categories of data were considered: The number of participants that were assessed to be at an increased risk for falls, the number of people that experienced a fall in the previous 12 months, the number of people that were injured as a result of a fall in the previous 12 months, and the number of people who answered yes to having problems with walking or balance. There were 88 total participants during this week. The results are given as a percentage in Table 1. Results of Participants in BBB Screenings held during Falls Prevention Week September 2013. For the category: Problems With Walking or Balance, the percentage is taken out of 87 because one data point was left unanswered.

### Results of Participants in BBB Screenings held during Active Aging Week September 2013

	<b>Rated Increased/Lower Risk for Falls</b>	<b>Experienced a Fall-Past 12 Months</b>	<b>Injured from a Fall-Past 12 Months</b>	<b>Problems with walking or Balance</b>

<b>Yes/Increased</b>	<b>68.2%</b>	<b>29.4%</b>	<b>15.9%</b>	<b>44.8%</b>
<b>Total # Participants</b>	<b>88</b>	<b>88</b>	<b>88</b>	<b>87</b>

## **Sustainability**

This project has been an ongoing process for many years. The WNC Fall Prevention Coalition is a division of the Land of Sky Regional Council. The original land of sky council in 1966 consisted of Buncombe, Haywood, Henderson, Madison and Transylvania counties. Today Land of Sky Regional Council remains a partnership between Buncombe, Henderson, Madison, and Transylvania counties and encompasses a 1,867 square mile region accessible to almost 320,000 people (<http://www.landofsky.org/mission.html>). The WNC Fall Prevention Coalition is represented by 30 regions and aims to reduce the number of falls and fall-related injuries in Western North Carolina. The Coalition is comprised of representatives from over 30 regional organizations. Fall prevention strategies are implemented throughout WNC through community screening and referral; community outreach and education, provider education and transitions in care (<http://www.wncfallpreventioncoalition.org>). These organizations are effective and sustainable because they are well established and continually updated and growing to meet the needs of the community.

The Falls Prevention Coalition is founded based in part on well-studied research provided by the CDC. A resource entitled Preventing Falls: How to Develop Community-based Fall Prevention Programs for Older Adults lays out the fundamentals for developing a sustainable community intervention to prevent and reduce falls among older adults. This research lays out the five building blocks as follows:

- Building Block 1: Education programs for older adults and their caregivers
- Building Block 2: Progressive exercise programs to improve mobility, strength, and balance
- Building Block 3: Medication review and management
- Building Block 4: Vision exams and vision improvement
- Building Block 5: Home safety assessment and home modification

These five building blocks of effective community based fall prevention programs are all implemented in the resource list provided to community members at BBB Screenings. The resource list includes information on vision screenings, exercise programs, home safety as well as physicians.

Follow-up calls to participants of BBB screenings in the past indicated if participants are able to receive follow up care from a physician. Also follow-up calls may indicate obstacles that participants may incur in using the recourses such as travel, time, or personal interest. Sustainability will depend on upkeep and implementing modifications that enable the participants to follow through with fall prevention. During screening events a coach is always present to monitor for quality and accuracy of the application of the screenings performed by the screeners. Upholding consistent screening procedures is vital to sustaining the program.

While this program is well established it will still depend on the continued recruitment of numerous volunteers to conduct screenings and host events. The consistent training and certification of these screeners protects the validity and sustainability of the program. The certification process includes a three hour workshop that educates and gives detail and practice in implementing the screenings. At the end of the workshop you must pass a test that ensures that you are proficient in BBB screening protocol. These workshops are held often and invite more people of all ages from the community to become involved in the Falls Prevention Coalition mission to prevent and reduce falls.

Another important factor in sustainability is to research the follow-through in the participants and to find out who can access the screenings. There are many possible barriers in reaching community members in regards to falls prevention. A study done in the U.K. by Bunn et al, 2008, found the following four questions to be important in considering the effectiveness of implementing falls prevention programs amongst older aging adults. I followed up each question with questions that related the points to the BBB Screenings and points of interest to improve the success of these screenings and reach more individuals that could benefit from information regarding falls prevention.

**1. What influences whether older people participate in falls-prevention Programs?**

- Have they had previous falls or injuries?
- Do they experience peer pressure or support from friend family members, or medical professionals?

**2. What factors prevent older people from taking part in falls-prevention Programs?**

- Do people have apprehensions about taking part in falls prevention due to embarrassment of aging?
- Do people of falls socioeconomic backgrounds have access to the resources that are suggested? Are they able to attend the events in which community outreach is supported
- Is prevention of falls supported by their values and lifestyle? 3. What do older people perceive to be the benefits of falls-prevention programs?

**4. What interventions are effective in promoting participation in falls prevention? programs?**

- Do people find the BBB Screenings or the resources helpful or relevant
- Do the participants follow up with physicians or other resources? Why or Why not?

**5. What are the key components of successful interventions for promoting participation in falls-prevention programs?**

- Are the interventions accessible to everyone?
- What is the drop off rate or rate of losing interest in the interventions?

## Conclusion

Data collected from screenings held during Active Aging Week of 2013 indicated that 68% of the participants were rated at increased risk for falls. Twenty nine point four percent of the participants screened said they had fallen in the past twelve months and fifteen point nine percent were injured from a fall in the past twelve months. Less than half, forty-four point eight percent of participants felt that they had problems with walking or balance. This was a notable point when compared against the greater than half, sixty-eight percent of participants that were assessed to be at risk for falls. This could be because each individual has a different definition of what is considered to be a problem with walking or balance. For instance, when conducting screenings, I noted that some individuals would say that they did not have problems with walking or balance, however would remark in later conversation that their shoes did not fit properly and could cause them to fall or that they fell due to unfamiliar surroundings and less lighting in a hotel room. Others would comment that they lost their balance due to blood pressure or cancer medications, however still answered that they did not have problems with walking or balance. I feel that these are contributing factors that could cause an individual to have problems walking or balance that may be worth highlighting in materials and resources that are provided during BBB Screenings and other venues of community outreach. Research of the most common factors and how to implement change amongst at risk members of the community would be worthwhile in the future.

In conducting the BBB Screenings and assimilating data it was noticeable that people do associate deficits and loss of abilities that they experience with aging in a negative light. Some people define having problems with walking or balance to be a personal deficit rather than a factor that may be modified and improved to prevent falls in the future. A negative attitude toward aging and/or apprehensive attitudes toward falls prevention intervention is a common hurdle in developing successful community outreach and fall prevention interventions (Bunn et al, 2008). Many participants saw the TUG as a test that was pass or fail and would want to know their time and if the time was “good”. One participant insisted that she do the TUG over to improve her time. This suggests that some people may not approach a BBB Screening for fear of failure. Some may see falling as a negative association with aging and deny that they may be at risk. One approach may be to highlight the importance of falls prevention in maintain freedom to be independent and maintain the ability to performs activities of daily living independently. The BBB Screenings offered by the Falls Prevention Coalition are the first step in creating community awareness and are an effective fall prevention intervention. Future research should focus on overcoming the barriers that people may face in accessing these resources.

Falls were the number-one cause of injury-related emergency department ED visits in 2007 ([www.injuryfreenc.ncdhhs.gov](http://www.injuryfreenc.ncdhhs.gov)). In the U.S., in 2002, greater than 12, 900 adults over 65 died as a result of falls and over 1.67 million adults were treated in ED'd for fall related injuries (Stevens et al, 2006). These injuries result in continued hospitalization and loss of independence of older adults. The costs of fall related injuries have reached over 30 million annually in the U.S. after adjustment for inflation (<http://www.cdc.gov/HomeandRecreationalSafety/Falls/fallcost.html>). These numbers are predicted to rise due to the rising population of elderly adults. It is expected that there will be more people over the age of 59 than people under the age of 18 by 2030 in the majority of North Carolina's counties (cdc.gov). The growing aging adult population that is at



greater risk of falling will likely result in a fall epidemic if fall prevention is not addressed. Organizations such as WNC Falls Prevention Coalition are vital to the reduction of these statistics. The BBB screenings that are offered through this organization may open the conversation about an individual's risk of falling and may make a critical connection between the individual at risk for falls and the appropriate physician or community resources available to prevent further falls or injuries in the future.

Although this was a short project, I was still able to gain many experiences and insights through working with the WNC Fall Prevention Coalition. This service learning was a meaningful experience for me because I had a personal connection to the devastating consequences that falls and fall related injuries can have on older adults. The preventative health care nature of fall prevention was closely related to many of my academic courses as well as my career goals. The knowledge that I gained during this service learning experience complemented the experience I had working in an adult day care setting. Most importantly, I got the opportunity to work closely with other people in our community to improve the lives of others. I learned how much a little bit of time from one person each week could impact needed community outreach programs. I hope to continue to build upon this experience in the future and find many other opportunities to work within our community to prevent falls and fall related injuries.

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