5-1-2023

# Development of a Multifactorial Virtual Fall Prevention Tool for Community Dwelling Older Women

Eduardo Gutierrez
*University of Nevada, Las Vegas*

Jacob James Nogra
*University of Nevada, Las Vegas*

Carol Sparks
*University of Nevada, Las Vegas*

Bradley Voels
*University of Nevada, Las Vegas*

# DEVELOPMENT OF A MULTIFACTORIAL VIRTUAL FALL PREVENTION TOOL FOR COMMUNITY DWELLING OLDER WOMEN

By

Eduardo Gutierrez
Jacob James Nogra
Carol Sparks
Bradley Voels

A doctoral project submitted in partial fulfillment
of the requirements for the

Doctor of Physical Therapy

Department of Physical Therapy
School of Integrated Health Sciences
The Graduate College

University of Nevada, Las Vegas
May 2023

UNLV | GRADUATE COLLEGE

# Doctoral Project Approval

The Graduate College
The University of Nevada, Las Vegas

May 12, 2023

This doctoral project prepared by

Eduardo Gutierrez

Jacob James Nogra

Carol Sparks

Bradley Voels

entitled

Development of a Multifactorial Virtual Fall Prevention Tool for Community Dwelling Older Women

is approved in partial fulfillment of the requirements for the degree of

Doctor of Physical Therapy
Department of Physical Therapy

Jenny Kent, Ph.D.
*Examination Committee Chair*

Daniel Young, Ph.D.
*Research Project Advisor*

Merrill Landers, Ph.D.
*Chair, Department of Physical Therapy*

Alyssa Crittenden, Ph.D.
*Vice Provost for Graduate Education & Dean of the Graduate College*

## Abstract

Falls are the leading causes of injury-related death in adults over the age of 65, with women sustaining more than twice the rate of fall-related fractures as men. Reduced access to in-person falls prevention programs during the COVID-19 pandemic created a need for a user-friendly guide to existing online fall prevention resources targeted at this vulnerable population. The first aim of this study was to create and make widely available a website with evidence-based resources that address a range of modifiable fall risk factors, and the second was to test its feasibility in a convenience sample of older women. The tool was created based on a literature search and through reputable resources (such as the National Council on Aging, CDC, AARP, the YMCA, and others). Utilizing a feasibility framework, we evaluated recruitment strategies, accessibility, acceptability, and suitability of the website for our targeted population. 44 Participants were recruited through existing networks, community partnerships, and in-person fall prevention screenings within the Las Vegas, NV metropolitan area. The online tool linked users to strength and balance exercise programs, vision screenings, home and community safety interventions, and information on polypharmacy, nutrition, and brain health. A survey was administered to participants following three months of access to the website. Survey responses revealed that the majority of users that replied to the survey were satisfied with their experience using the website, found the website easy to use, felt they knew more about fall prevention after using the website, planned to continue to use it, and would recommend it to others. Our study concluded that it is feasible to distribute resources on the topic of fall prevention to older women utilizing the medium of a website.

## Table of Contents

## Introduction

The Center for Disease Control and Prevention (CDC) reports that falls are the leading cause of injury-related deaths in individuals 65 years and older, with more than one out of four older adults falling each year (Bergen et al., 2017). One out of every five falls results in serious injury (Sterling DA, 2001). In the United States, the combined annual cost of these falls totals over $50 billion, with Medicare and Medicaid burden accounting for 75% of the costs (Florence et al., 2018).

Women live longer than men, are more likely to live alone, and are more likely to be affected by fall-related injuries (Stevens & Sogolow, 2005). As reported by the CDC, women sustain more than twice the rate of fractures from fall-related accidents as men, indicating a need to provide additional resources targeted towards this population. In a study conducted in 2016, older women were more likely to report an increased fear of falling than men and had higher Falls Efficacy Scale (FES) scores, indicating a higher level of concern about falling during social and physical activities. The women included in the study were also 3 times more likely to have a Vulnerable Elder Survey (VES) score of three or more; a predictor for risk of decline and death (Greenberg et al., 2016). With the increased risk of serious injury, vulnerability to functional decline, and increased fear of falling, it is important to investigate methods for reducing the fear of falling and improve the outcomes of fall prevention initiatives for women over the age of 65.

Clinical Practice Guidelines set by the American Geriatrics Society/British Geriatrics Society (AGS/BGS) have established the following modifiable risk factors for falls in older adults: difficulty with gait and balance, lower extremity weakness, visual impairment, problems with the feet and footwear, side effects from medications and the presence of polypharmacy, vitamin D deficiency, postural hypotension, and environmental hazards (AGS/BGS, 2010). Due

to this complex and multidimensional set of risk factors, multifactorial falls prevention programs appear more effective for individuals with a fall history than single factor interventions (Costello & Edelstein, 2008). According to the Costello & Edelstein systematic review (2008), programs that are effective in reducing the number of falls included medication and vision assessment with appropriate referrals, home hazard assessment and modifications, and comprehensive exercise programs that combine strength, balance, and endurance training. According to the Clinical Practice Guideline for the Prevention of Falls in Older Persons, multifactorial interventions should also include an educational component that is tailored to the modifiable risk factors identified for each individual (AGS/BGS, 2010).

With trends shifting away from in-person to online exercise programs during the COVID-19 pandemic, the internet is more crucial to utilize than ever, especially for older adults who wish to access resources from home. A Pew Research Center survey found that on average 67% of older adults access the internet, with 82% of 65–69-year-olds using the internet compared to 44% of those 80 years or older (Anderson & Perrin, 2017). Those percentages have been rising over time, and a growing number of older adults have access to online programs (Anderson & Perrin, 2017). Researchers surveying people between the ages of 63-66 found that close to 47% of respondents looked for health information online (Flynn, 2006). At the time of this research, it was important for many older adults to limit their time outside of their home, given that seniors were at a higher risk of severe illness from COVID-19 (Older Adults, CDC, 2020). Internet users aged 60 years and older have reported significant increases to their internet usage during the COVID-19 pandemic (Nimrod, 2020).

With more women living alone who may have experienced social isolation due to COVID-19, we hypothesized there was an increased need for online resources that can reach

more older women living in the community. While there are many online fall-prevention resources already available, they vary in approach, duration, requirements, and focus. In our research, we were unable to identify any single online resource that included all aspects of a multifactorial fall prevention program and was easily accessible for older adults. We also found that online programs were not structured to identify a user's unique fall risk predictors. The tool we developed is comprehensive and identifies programs that suit a variety of older women who vary from high risk of falling to minimal risk of falling.

The first aim of this study was to develop an online tool that addresses the needs of the older female population with regards to identifying suitable online fall risk prevention programs and resources. The second aim of this study was to determine the feasibility of the online tool, as well as assess the satisfaction and reduction in fear of falling for women (65+) who utilize the online resources. We hypothesized that this tool would be feasible for this specific population, and that users of the tool would report satisfaction with the tool and less fear of falling because the program was specifically designed for them.

## Materials and Methods

**Aim 1 - Development of the Online Tool**:

To compile relevant resources for the online tool, we searched through Medline, CINAHL, PubMed, Scopus, and Google Scholar in order to find the best available evidence for the multifactorial fall prevention programs. The key search terms used were: Fall prevention, falls, older adults, women, older women, multifactorial, online intervention, fall prevention exercise, home hazard assessment, polypharmacy, women's health, vision assessment, and nutrition. In addition to a literature search for peer-reviewed publications, we included resources from reputable organizations that provide health-related information for this population (National Council on Aging, CDC, AARP, the YMCA, and others). Previous research has shown that effective programs for the older population include at least two of the following: strengthening, balance training, and aerobic/endurance training (Costello & Edelstein, 2008). We gathered resources that encompass risk factors related to fall-prevention in older women, with a focus on strength, balance, and endurance training.

To create the website, we used Google Sites as our free host and design template. From the resources that were compiled, we selected content with evidence supporting its effectiveness or that came from well-established sources targeted towards our population. Resources include: NCOA, CDC, AARP, NEI, Prevent Blindness America, USDA, Mayo Clinic, Bone health and osteoporosis foundation, NIA, BrainMetrix, MyBrainTest, Office on Women's Health, Arthritis Foundation, Johns Hopkins, as well as assorted evidence-based exercise programs (See Appendix II). These resources were categorized by risk factor with a dedicated page on our website that educated users on said risk factor and provided links to existing resources targeting the older adult population. From our home page, users were able to take a fall-risk assessment

survey and home-hazard assessment to help guide them to which resources they would benefit most from individually. Directly under these assessments were large labeled tiled icons they can click with a convenient sidebar that provides the same information.

**Aim 2 - Testing Feasibility and Acceptability:**

**Design and Participants**

For our second aim, we conducted a cross-sectional analysis using a retrospective survey three months post-use of the online fall prevention tool for each respective participant. Our goal was to include a large sample size of community-dwelling women, 65 years and older who have access to the internet and who were willing to complete a short anonymous post-participation survey. We identified potential participants with email and social media campaigns through existing student, faculty, and alumni networks, as well as reaching out to community organizations such as the Nevada Goes Falls Free Coalition, YMCA, and active adult communities in the Las Vegas, NV area. In-person recruitment took place at fall risk screening events in the Las Vegas, NV area. Potential participants were provided a link to access the website through a QR code, hyperlink through email, or from a physical flier. Participants visiting the website were then invited to sign up for the email list, and these participants were then invited to complete the survey. The UNLV Office of Research Integrity – Human Subjects determined that our project did not meet the definition of 'research with human subjects' according to federal regulations. As such there were no further requirements for review.

**Framework and Outcome Measures:**

Utilizing relevant aspects of a feasibility framework by Orsmond and Cohn (2015), we assessed our website's potential as an intervention for fall risk. The framework includes the following five objectives: 1) evaluation of recruitment capability and resulting sample

characteristics, 2) evaluation and refinement of data collection procedures and outcome measures, 3) evaluation of acceptability and suitability of intervention and study procedures, 4) evaluation of resources and ability to manage and implement the study and intervention, and 5) preliminary evaluation of participant responses to intervention. (Orsmond & Cohn, 2015). For objective 1, we assessed the recruitment process by identifying obstacles to participation and comparing our resulting sample characteristics to the characteristics of the participants that we were attempting to target. For objective 2, appropriateness of data collection procedures was assessed by whether our study provided complete and usable data. Our study assessed the acceptability and suitability of the website for our participants (objective 3) by utilizing a post-participation survey consisting of multiple choice, multiple select, and free response categories with a total of 18 questions. This also evaluated and measured the potential for success with the intended population. Objective 4 was not evaluated directly in this study, though the research was able to be conducted with proper data collection and analysis utilizing resources available to this research group through University of Nevada - Las Vegas. Evaluation of participant responses to the website (objective 5) was addressed by collecting qualitative and quantitative data using the post-participation survey (Appendix I).

Once new participants accessed the website, they were encouraged to submit their contact information on the home page (name and email address only). Names, email addresses, and the date they signed up were recorded through Google Forms. The date they signed up was used as a "start date" for their three-month post-participation survey. Participants were not required to access the website for a specific frequency/duration as it was an available resource participants chose to access like any other website. Three months after their first visit to the website, participants were sent the post-participation survey via email. The survey served as our primary

outcome measure and was constructed with the intent to avoid any leading, loaded, double-barreled, or absolute questions. Survey responses were collected anonymously to avoid selection and sampling bias. Survey respondents were also entered into a randomized gift card drawing to incentivize participation and minimize non-response bias.

The survey consisted of categorical questions used to collect demographic information including age, gender identity, number of previous falls, where they heard about the website, and their amount of usage of the site. Six Likert scale questions were included to identify participants' overall satisfaction with the website as well as their opinion on the design, content, and ease of use. Questions identifying their goals and barriers to using the website were also included. Lastly, one free-response question asking, “How can we improve this website?” was included (See Appendix I).

For each of the six questions containing a Likert scale in the survey, a numerical value from 1-6 was assigned to each answer (1 for “Strongly Disagree” through 6 for “Strongly Agree”). The averages of the participant responses were calculated and presented for each question. For categorical questions, we quantified each response as a percentage of total responses. Descriptive statistics were used to analyze the distribution of answers among all of the surveys submitted. Qualitative data collected from the free response question was used to provide further contextual information for the quantitative analysis, as well as inform future research.

## Results

**Aim 1:**

For our first aim, we provided users with direct links to selected online resources that address modifiable factors under the following risk categories: exercise, home and community hazards, polypharmacy, vision, nutrition, footwear, brain health, and common health conditions that can contribute to a person's overall fall risk. As the cornerstone of our website, we included links to evidence-based fall prevention exercise programs that focus on strength, balance, and endurance. Users were provided brief descriptions of each program alongside links to self-guided exercise videos to assist them in choosing a program based on personal preference (Appendix II). These resources were compiled together into a website with hyperlinked text and images that address the needs of users based on their individualized risk categories**.**

The website helped users identify their individual risk factors and needs through an introductory survey. Users were provided with self-assessment tools for modifiable risk factors and matched with existing educational resources based on their risk profile. The first 12 questions of the fall risk survey were based on the STEADI Stay Independent Questionnaire, to provide participants with an objective measure of their fall risk that they could share with their health care provider. There were additional questions concerned with the participants' memory, presence of dizziness, and changes in vision included in the survey that did not factor into their overall fall risk score but provided them with more insight into their personal modifiable fall risk factors and guided them to specific free resources on the website. (See Appendix III).

**Aim 2:**

For our second aim, we used the results from our post-participation survey to evaluate the feasibility of the website. Objective 1) Recruitment and sample characteristics: We recruited 45

initial participants and received 22 surveys in response, resulting in a 49% retention rate. Out of the 22 responses, six respondents did not meet the inclusion criteria for age, leaving 16 eligible surveys for review. Four participants had an age of 65-74 years, 11 had an age of 75-84 years, and one had an age of 85+ years.

Objective 2) Evaluation of data collection procedures and outcome measures: We were able to collect initial contact information for interested participants through a Google Forms link directly on the website. From there we distributed our follow-up survey over email and successfully collected anonymous responses through a Qualtrics survey form providing complete and usable data. Data collected during this time was usable with some recruitment and general study limitations elaborated on in the discussion portion of this paper.

Objectives 3 and 5) Evaluation of participant response as it pertains to acceptability and suitability of the website. Two of the main criticisms of the website were that the website did not provide any community or group interaction (19% of participants), and that the website did not provide in person fall prevention services (13% of participants). Lastly, 81% of participants felt like they knew more about fall prevention after using the website and agreed that they felt less worried about falling after using it (Figure 1). Of the 16 eligible respondents, 15 participants were satisfied with their experience using the website (Figure 1). Detailed responses in Table 1 show that the top three aspects of the site that most users liked were the fall risk survey (50% of participants), the website being easy to navigate (38% of participants), and the overall design of the website (31% of participants).

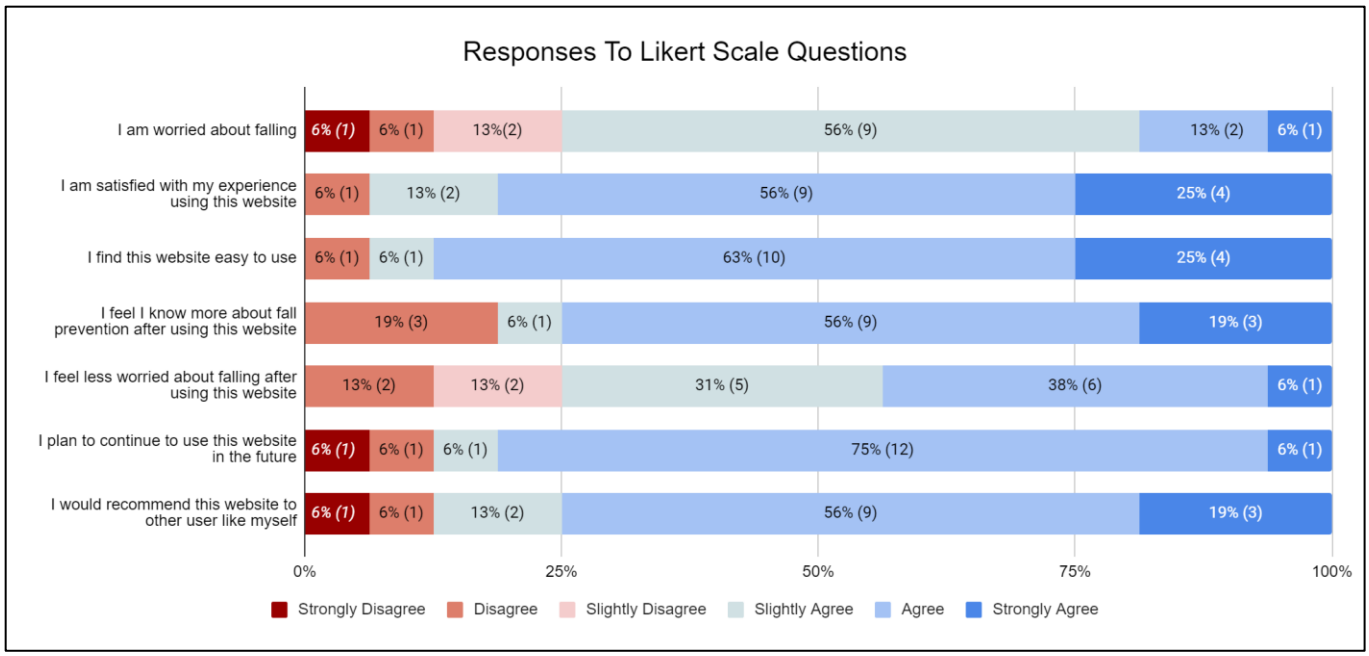



***Figure 1*. Survey responses to Likert Scale Questions**. This figure illustrates participant responses to Likert scale questions, pertaining to satisfaction and ease of use of the website (*n=16*).

## Table 1.

*Survey Responses to Multiple Select Questions*

| Question | Response | Number of Responses | Percent of Responses |
|---|---|---|---|
| What are your goals for using this website? (Multiple select, participants could select more than one answer) | Decreasing my risk of falls | 12 | 75% |
| | Learning about general fall prevention | 8 | 50% |
| | Learning about common medical conditions of older adults | 3 | 19% |
| | Initiating an exercise program | 3 | 19% |
| | Improving my diet | 2 | 13% |
| | Other[1] (Free response text entry) | 1 | 6% |
| What, if anything, is preventing you from achieving those goals? (Multiple select, participants could select more than one answer) | I prefer in person or group exercise programs | 8 | 50% |
| | I don't feel safe exercising on my own | 3 | 19% |
| | The resources on the website are not relevant to my goals | 3 | 19% |
| | Other[2] (Free response text entry) | 3 | 19% |

| | | | |
|---|---|---|---|
| | I found the website confusing or hard to use | 1 | 6% |
| | I don't have access to a computer or consistent internet connection | 0 | 0% |
| | I don't have time for a new exercise program | 0 | 0% |
| | I don't have privacy in my home environment | 0 | 0% |
| | I don't have enough space in my home environment | 0 | 0% |
| What did you like most about the website? (Multiple select, participants could select more than one answer) | The fall risk survey | 8 | 50% |
| | The website is easy to navigate | 6 | 38% |
| | The overall design of the website | 5 | 31% |
| | The use of pictures on the website | 5 | 31% |
| | The exercise programs | 5 | 31% |
| | The information on home hazards and community safety | 4 | 25% |
| | The information on women's health | 4 | 25% |
| | The links to outside resources | 2 | 13% |
| | The information on nutrition | 2 | 13% |
| | The information on brain health | 2 | 13% |
| | Other[3] (Free response text entry) | 1 | 6% |
| | The information on medications | 0 | 0% |
| | The information on vision | 0 | 0% |
| What did you like least about the website? (Multiple select, participants could select more than one answer) | Other[4] (Free response text entry) | 5 | 31% |
| | The website does not provide me with any community or group interaction | 3 | 19% |
| | The website does not provide in person fall prevention services | 2 | 13% |
| | The website contains too many links to other websites | 2 | 13% |
| | The website does not provide enough information or resources | 1 | 6% |
| | The website provides too much information | 1 | 6% |
| | The exercises on the website were too hard | 1 | 6% |
| | The exercises on the website were too easy | 1 | 6% |
| | The website does not provide enough live or interactive content | 1 | 6% |

| | | | |
|---|---|---|---|
| | I am unable to save the results of my survey | 1 | 6% |
| | The website does not provide enough exercise videos | 0 | 0% |
| | The website does not provide information on men's health | 0 | 0% |
| | The website is hard to navigate | 0 | 0% |

**Table 1.** ***Survey Responses to Multiple Select Questions*** **-** multiple select questions investigating participants' goals and barriers for usage of the website, as well as user preferences relating to specific website content (*n=16*). Participants' responses when selecting "Other":

Other[1]: "Strictly to inform myself of what you offered".
Other[2]: "Nothing", "not applicable", "I achieved my goal".
Other[3]: "It was so long ago that I browsed the site, I no longer remember".
Other[4]: "Nothing", "Nothing", "Nothing", "Not applicable", "Don't remember".

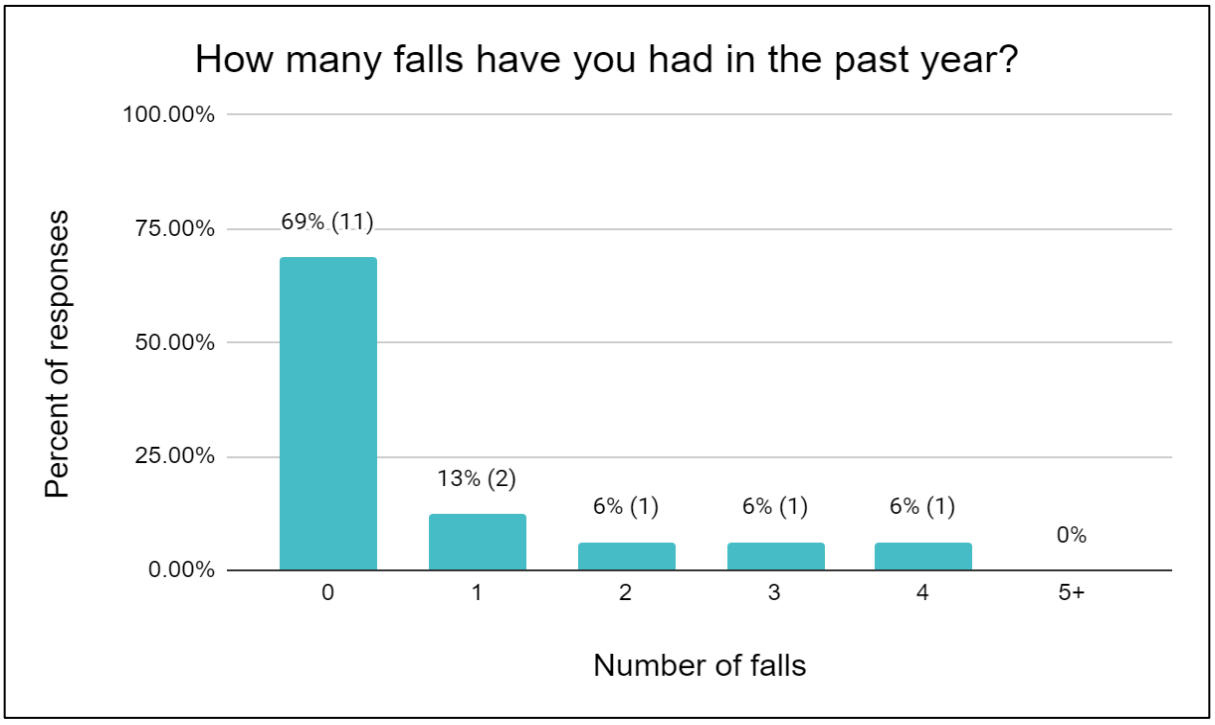



***Figure 2.*** **Number of Falls in the Past Year.** This graph illustrates the self-reported number of falls participants sustained within the prior 12 months. People who have a history of falls are at a higher risk for future falls (VA Greater Los Angeles et al, 2017) (*n = 16).*

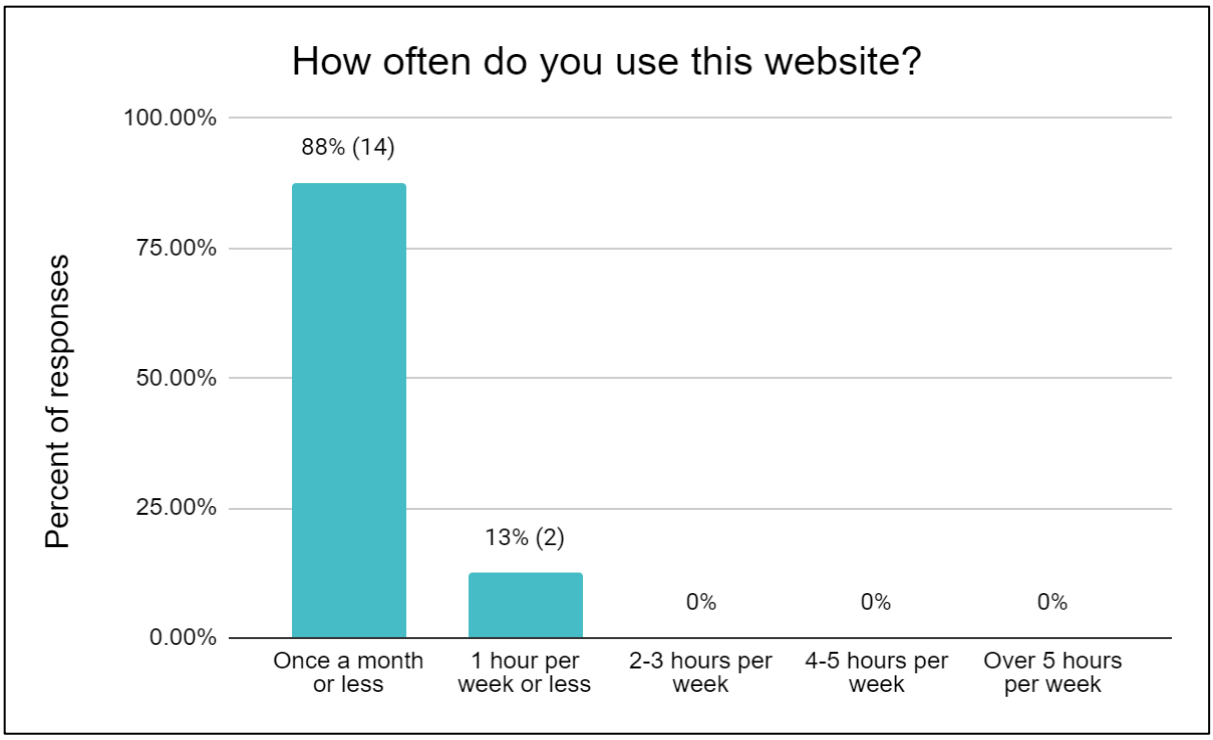



***Figure 3*. Frequency of Website Usage.** This graph illustrates participants' self-reported frequency of usage of the website (*n=16).*

Combining the answer categories 'slightly agree', 'agree' and 'strongly agree', 75% of the respondents agreed with the statement "I am worried about falling." Almost 94% of the respondents were satisfied with their experience using this website and found the website easy to use. Their satisfaction with the website was also apparent as 88% plan to "continue to use this website in the future" and "would recommend this website to other users like myself." See Figure 1 for more detail.

Answers varied to the question of "How can we improve this website?" with two blank/no response. Seven participants responded with "No suggestions," with other respondents stating, "I don't have any suggestions," "It's ok…," "It's ok as is," "no opinion," and "No ideas at this time." The survey received three positive responses including "It's great as is," "It's already a great overview of topics related to falls," and "I enjoyed it and found it easy to

navigate." One user replied, "I found it easy to navigate." Another user indicated that they would like to "interact with a person." One user responded that they would like "information on good shoes," and one user responded that they would like the website to "explain the program first initially."

## Discussion

Multifactorial programs targeting fall prevention for the older adult population fulfill an important need in reducing the burden of falls (Costello & Edelstein, 2008). While there are many resources already available to older adults, they may be difficult to find, hard to navigate, and users may have to search through many different websites to access the information they need. This could cause confusion and frustration for many online users. Our website addresses those challenges by providing many resources that speak to the different modifiable risk factors of fall prevention in one website, while remaining easy to navigate and understand. In addition, many older adults may not be aware that certain modifiable factors can increase their risk of falling, and our fall risk survey addresses this potential gap in knowledge by asking questions to ascertain their personal fall risk factors and directing them to educational resources that target the risk factors unique to their experience.

Considering 88% of respondents agreed that they plan to continue to use the website, results suggest the website is acceptable and suitable for our target population. 88% of participants responded that they would recommend this website to other users like themselves, leading us to propose our platform as an appropriate method to guide older adults in finding evidence-based information related to fall prevention. Even with 94% of participants reporting they are satisfied with their experience using this website, only 75% of participants say they feel less worried about falling after using the website. Due to the number of responses indicating a desire for an in person or group exercise component (50% of participants) as well as not feeling safe exercising on their own (19% of participants), the addition of an in-person component to the website could help reduce participants' fear of falling or apprehension with using the program independently. For those seeking virtual resources such as our website due to decreased in-

person programs, there was a possible decrease in the desire for virtual resources once people were able to be more active in their communities. In addition, we faced recruitment challenges such as lack of interest among community partners and our targeted demographic. Even with these recruitment challenges we were able to recruit 45 initial participants, however the study only had a 49% retention rate. Additionally, 27% of respondents to the survey did not meet the inclusion criteria for age, leaving a smaller sample size than anticipated after initial recruitment.

Our findings strongly suggest that our online training tool had a meaningful impact on older women in the community, since 88% of respondents agreed they plan to continue to use the website. While our results show there may still be an inherent need for group exercises or in-person programs, it is promising that our tool may be helpful in filling in potential gaps for people without the desire for in-person programs, without the ability to attend in-person programs, or to use as a supplemental resource in addition to their in-person programs. Our results also caused us to question the notion of older adults using the internet at a much higher rate during the pandemic as 88% of respondents reported using the website once a month or less. However, there can be a multitude of extraneous factors that can be explored in future studies (Nimrod, 2020).

There were several limitations to our study, including but not limited to small sample size (*n=16*). The unpredictability of the COVID-19 pandemic presented early limitations for in-person recruitment events. And as time progressed, restrictions placed on in-person activities became less prevalent among all communities. This may have affected potential participants' interest in continuing with online services. Another limitation to our study is having no objective measure to determine the quality of resources provided. We chose resources from reputable sources when available but used our own judgment and knowledge to assess a resource's quality.

Another limitation identified through in-person fall screenings and recruitment events was the lack of access to a computer or stable internet connection within the target population. In-person recruitment events were limited to the Las Vegas, NV metropolitan area. Another limitation of our study was using web design software that does not track user analytics, so we were unable to obtain reliable data on the degree to which users accessed the site. Future iterations of this website would be improved by upgrading to a web platform that tracks user data.

Many users we connected with at both in-person screening and recruitment events, as well as through survey responses indicated a strong desire for community-based services and group exercise programs. Future online platforms could address that need as well as provide an opportunity for growth by establishing a robust social media presence, providing an interactive forum for users to connect with each other, and creating original virtual content that could be accessed remotely through group classroom experiences with established community partners.

## Conclusion

Our study has shown that it is feasible to distribute resources on the topic of fall prevention to older women utilizing the medium of a website, though there is room for improvement. Overall positive responses in categories such as knowledge of fall risk, recommending the website to others like them, and satisfaction with the website suggest that older women are open to utilizing online resources to decrease their fall risk. However, responses such as only 75% of our respondents feeling less worried about falls after using the website, and 19% of respondents reporting "not feeling safe enough to exercise alone," could show that something was lacking in our website or may suggest that our demographic did not have the confidence to exercise without guidance or supervision. This study could be used as a stepping stone for future research into methods of decreasing fall risk in older women or may be utilized to create an improved website based on the feedback from participants.

# APPENDICES

**CONTENTS:**

## Appendix I: Post-Participation Survey

Q1 Please select from the following age groups:

- ○ Under 55
- ○ 55-64
- ○ 65-74
- ○ 75-84
- ○ 85 or above

---

Q2 Which gender identity do you most identify with?

- ○ Female
- ○ Male
- ○ Genderqueer/Gender Fluid
- ○ Intersex
- ○ Non-binary
- ○ Transgender Female
- ○ Transgender Male
- ○ Prefer not to answer
- ○ My identity is not listed above (please specify)
  _____

---

Q3 Where did you first hear about us?

- ○ UNLVPT Instagram
- ○ From someone affiliated with UNLV Department of Physical Therapy
- ○ Stepping On Fall Prevention Program
- ○ UNLV Department of Brain Health
- ○ UNLV/Cleveland Health Fall Prevention screening
- ○ Las Vegas Amputee support group
- ○ City of Henderson Downtown Senior Center
- ○ Skyview YMCA
- ○ Nevada Goes Falls Free Coalition
- ○ Cambridge Recreation Center
- ○ Clark County Senior Advocate Center
- ○ A-Z Women's Center
- ○ Other (please specify) _____

---

Q4 How many falls have you had within the last year?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5+

---

Q5 I am worried about falling:

- ○ Strongly Agree
- ○ Agree
- ○ Slightly Agree
- ○ Slightly Disagree
- ○ Disagree
- ○ Strongly Disagree

---

Q6 How often do you use this website?

- ○ Once a month or less
- ○ 0-1 hours per week
- ○ 2-3 hours per week
- ○ 4-5 hours per week
- ○ Over 5 hours per week

Q7 I am satisfied with my experience using this website:

- ○ Strongly Agree
- ○ Agree
- ○ Slightly Agree
- ○ Slightly Disagree
- ○ Disagree
- ○ Strongly Disagree

---

Q8 I find this website easy to use:

- ○ Strongly Agree
- ○ Agree
- ○ Slightly Agree
- ○ Slightly Disagree
- ○ Disagree
- ○ Strongly Disagree

---

Q9 I feel I know more about fall prevention after using this website:

- ○ Strongly Agree
- ○ Agree
- ○ Slightly Agree
- ○ Slightly Disagree
- ○ Disagree
- ○ Strongly Disagree

---

Q10 I feel less worried about falling after using this website:

- ○ Strongly Agree
- ○ Agree
- ○ Slightly Agree
- ○ Slightly Disagree
- ○ Disagree
- ○ Strongly Disagree

Q11 I plan to continue to use this website in the future:

- ○ Strongly Agree
- ○ Agree
- ○ Slightly Agree
- ○ Slightly Disagree
- ○ Disagree
- ○ Strongly Disagree

---

Q12 I would recommend this website to other users like myself:

- ○ Strongly Agree
- ○ Agree
- ○ Slightly Agree
- ○ Slightly Disagree
- ○ Disagree
- ○ Strongly Disagree

---

Q13 What are your goals for using this website? (Select all that apply)

- [ ] Decreasing my risk of falls
- [ ] Learning about general fall prevention
- [ ] Learning about common medical conditions of older adults
- [ ] Improving my diet
- [ ] Initiating and exercise program
- [ ] Other (please specify) _____

Q14 What, if anything, is preventing you from achieving those goals? (Select all that apply)

- [ ] I don't have access to a computer or consistent internet connection
- [ ] I found the website confusing or hard to use
- [ ] I don't have time for a new exercise program
- [ ] I don't feel safe exercising on my own
- [ ] I prefer in person or group exercise program
- [ ] I don't have privacy in my home environment
- [ ] I don't have enough space in my home environment
- [ ] The resources on the website are not relevant to my goals
- [ ] Other (please specify) _____

Q15 What did you like most about the website? (Select all that apply)

- [ ] The website is easy to navigate
- [ ] The overall design of the website
- [ ] The use of pictures on the website
- [ ] The links to outside resource
- [ ] The fall risk survey
- [ ] The information on home hazards and community safety
- [ ] The exercise programs
- [ ] The information on medications
- [ ] The information on vision
- [ ] The information on nutrition
- [ ] The information on brain health
- [ ] The information on women's health
- [ ] Other (please specify) _____

Q16 What did you like least about this website? (Select all that apply)

- [ ] The website is hard to navigate
- [ ] The website does not provide enough information or resources
- [ ] The website provides too much information
- [ ] The exercises on the website were too hard
- [ ] The exercises on the website were too easy
- [ ] The website does not provide enough exercise videos
- [ ] The website does not provide enough live or interactive content
- [ ] The website does not provide in person fall prevention services
- [ ] The website does not provide me with any community or group interaction
- [ ] The website does not provide information on men's health
- [ ] The website contains too many links to other websites
- [ ] I am unable to save the results of my survey
- [ ] Other (please specify) _____

Q17 How can we improve this website? (Please write any feedback you may have by clicking the box below to start typing)

_____

Q18 Would you like to enter your name and email on the next page in order to have a chance at winning one of five $50 gift cards for your participation in this research study? Your personal

information will **NOT** be tied to the responses you have given. Your responses will remain anonymous and will not affect your chances of being selected for a gift card.

- ○ Yes
- ○ No

## Appendix II: Exercise Programs

In addition to a literature search for peer-reviewed publications, we included resources from the following organizations that provide health-related information for this population.

### Otago Exercise Program

The Otago Exercise Program (Otago) is a home-based, balance and strength fall prevention program that was originally designed to be delivered by a physical therapist over the course of 52 weeks. Otago began in New Zealand and was developed, tested, and demonstrated to be most effective for reducing falls and fall-related injuries among high-risk individuals: adults more than 80 years of age and those who have had a previous fall within one calendar year. The program was developed by Professors John Campbell, MD, FRACP, and Clare Robertson, PhD, researchers at the University of Otago in Dunedin, New Zealand and the New Zealand Falls Prevention Research Group. The Centers for Disease Control and Prevention's (CDC), National Center for Injury Prevention and Control (NCIPC) modified and adapted the New Zealand Otago Exercise Program manual for use in the United States.

### Tai Ji Quan

Tai Ji Quan: Moving for Better Balance is an evidence-based balance program to help increase your ability to balance and decrease fall risk.

### Healthy Living Institute - Balance, Fitness, and Meditation

The Healthy Living Institute at University Medical Center (UMC) in Southern Nevada has created 3 virtual classes focusing on balance, fitness, and meditation. They ask that you consult with your doctor to ensure that you are safe and ready to perform exercise.

### Stay Active & Independent for Life (SAIL)

The Stay Active and Independent for Life (SAIL) program is a fall prevention program that works on building strength, improving balance, and increasing general fitness in those 65 and older.

### Tai Chi for Arthritis

Dr. Lam's Tai Chi for arthritis is a program designed to help reduce falls, relieve pain, and improve quality of life. This program has been recommended for fall prevention by Centers for Disease Control and Prevention (CDC).

### Walk With Ease

The Arthritis Foundation's Self-Directed Walk With Ease (WWE) program is proven to reduce the pain of arthritis. Walk With Ease can help you safely make physical activity part of your everyday life. Even if you haven't been formally diagnosed with arthritis, Walk With Ease is a great way to learn how to incorporate walking into your life in a safe, comfortable, and effective way.

### Sit and Be Fit

*Sit and Be Fit* is a low-impact senior chair exercise program founded in 1985 by registered nurse, Mary Ann Wilson. All *Sit and Be Fit* exercise classes can be safely performed while seated or lying down. *Sit and Be Fit* features many playlists targeting specific concerns such as balance, arthritis, osteoporosis, brain fitness, COPD, diabetes, neurological impairments and more.

## Appendix III: Fall Risk Survey

The first 12 questions of this survey will provide you with an evidence-based assessment of your overall fall risk*. We have included additional questions that can help identify areas that may also be contributing to your fall risk. Please click the "Submit answers" at the bottom when complete.

---

Q1 I have fallen in the past year.

- ○ No
- ○ Yes

---

Q2 I use or have been advised to use a cane or walker to get around safely.

- ○ No
- ○ Yes

---

Q3 Sometimes I feel unsteady when I am walking.

- ○ No
- ○ Yes

---

Q4 I steady myself by holding onto furniture when walking at home.

- ○ No
- ○ Yes

---

Q5 I am worried about falling.

- ○ No
- ○ Yes

---

Q6 I need to push with my hands to stand up from a chair.

- ○ No
- ○ Yes

---

Q7 I have some trouble stepping up onto a curb

- ○ No
- ○ Yes

---

Q8 I often have to rush to the toilet.

- ○ No
- ○ Yes

---

Q9 I have lost some feeling in my feet.

- ○ No
- ○ Yes

---

Q10 I take medicine that sometimes makes me feel light-headed or more tired than usual.

- ○ No
- ○ Yes

Q11 I take medicine to help me sleep or improve my mood.

- No
- Yes

Q12 I often feel sad or depressed.

- No
- Yes

Please answer these additional questions to help us personalize your experience (These questions do not contribute to your overall score).

Q13 Have you had any concerns about your memory lately?

- No
- Yes

Q14 Do you want more information on ways to stimulate your brain and other brain games?

- No
- Yes

Q15 Do you often feel dizzy or lightheaded when you get up in the morning or change positions?

- No
- Yes

Q16 Have you noticed any recent changes in your vision?

- No
- Yes

---

Q17 Would you like to learn about common supplements that can help improve your fall risk?

- No
- Yes

---

Q18 Would you like to learn more about nutrition and ways you can improve your bone and heart health?

- No
- Yes

---

Q19 Are you sometimes fearful of falling when walking around your neighborhood or other outdoor environments?

- No
- Yes

---

Q20 Would you like to learn more about footwear that can help reduce your risk of falling?

- No
- Yes

---

Q21 Have you been diagnosed with osteoporosis or would you like to learn more about osteoporosis?

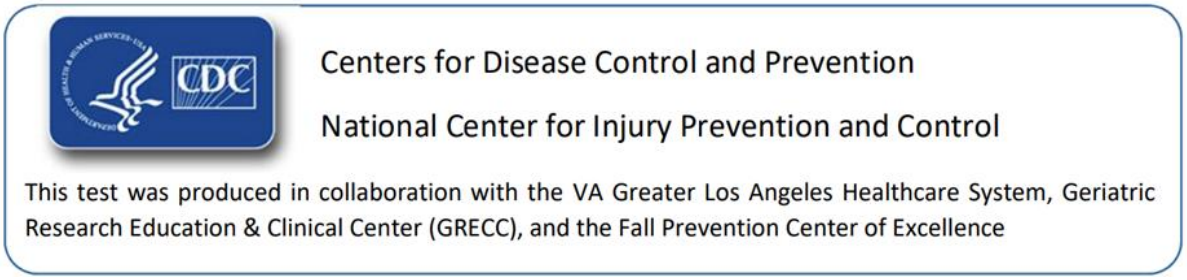
- ○ No
- ○ Yes

---

Q22 Are you concerned you may fall while walking in a place with crowds?

- ○ No
- ○ Yes

*Adapted from the CDC's **Stay Independent Questionnaire**:



## References


Anderson, M., & Perrin, A. (2020, May 17). Tech adoption climbs among older Americans. Retrieved November 20, 2020, from https://www.pewresearch.org/internet/2017/05/17/tech-adoption-climbs-among-older-adults/

Bergen, G., PhD, Stevens, M. R., MA, MSPH, & Burns, E. R., MPH. (2017, August 17). Falls and fall injuries among adults aged ≥ 65 Years -United States, 2014. Retrieved from https://www.cdc.gov/mmwr/volumes/65/wr/mm6537a2.htm

Centers for Disease Control and Prevention. (2020, November 27). Older adults and COVID-19. Retrieved November 29, 2020, from https://www.cdc.gov/coronavirus/ 2019-ncov/need-extra-precautions/older-adults.html

Costello, E., & Edelstein, J. E. (2008). Update on falls prevention for community-dwelling older adults: Review of single and multifactorial intervention programs. *The Journal of Rehabilitation Research and Development*, 45(8), 1135. doi:10.1682/jrrd.2007.10.0169

Florence, C. S., Bergen, G., Atherly, A., Burns, E., Stevens, J., & Drake, C. (2018). Medical costs of fatal and nonfatal falls in older adults. *Journal of the American Geriatrics Society*, 66(4), 693–698. doi:10.1111/jgs.15304

Flynn, K. E., Smith, M. A., & Freese, J. (2006). When do older adults turn to the internet for health information? Findings from the Wisconsin longitudinal study. *Journal of General Internal Medicine*, 21(12), 1295–1301. doi:10.1111/j.1525-1497.2006.00622.x

Greenberg, M. R., Moore, E. C., Nguyen, M. C., Stello, B., Goldberg, A., Barraco, R. D., Porter, B. G., Kurt, A., Dusza, S. W., & Kane, B. G. (2016). Perceived fall risk and functional decline: gender differences in patient's willingness to discuss fall risk, fall history,

or to have a home safety evaluation. *The Yale Journal of Biology and Medicine*, 89(2), 261–267.

Nimrod, G. (2020). Changes in internet use when coping with stress: Older adults during the COVID-19 pandemic. *The American Journal of Geriatric Psychiatry*, 28(10), 1020-1024. doi:10.1016/j.jagp.2020.07.010

Orsmond, G. I., & Cohn, E. S. (2015). The distinctive features of a feasibility study. *OTJR: Occupation, Participation and Health*, 35(3), 169-177. doi:10.1177/1539449215578649

Panel on Prevention of Falls in Older Persons, American Geriatric Society and British Geriatrics Society (2011). Summary of the updated American Geriatrics Society/British Geriatrics Society clinical practice guideline for prevention of falls in older persons. (2011). *Journal of the American Geriatrics Society*, 59(1), 148-157. doi:10.1111/j.1532-5415.2010.03234.x

Sterling DA, O'Connor JA, Bonadies J. Geriatric falls: injury severity is high and disproportionate to mechanism. *J Trauma*. 2001;50(1):116-119. doi:10.1097/00005373-200101000-00021

Stevens, J. A., & Sogolow, E. D. (2005). Gender differences for non-fatal unintentional fall related injuries among older adults. Injury prevention: *Journal of the International Society for Child and Adolescent Injury Prevention*, 11(2), 115–119. doi:10.1136/ip.2004.005835

VA Greater Los Angeles Healthcare System, Geriatric Research Education & Clinical Center (GRECC), and the Fall Prevention Center of Excellence. (2017). *STEADI - Stay Independent Questionnaire*. Centers for Disease Control and Prevention.

# Curriculum Vitae

Eduardo Gutierrez
eduardo.gutierrez93@outlook.com

**Education**

DPT University of Nevada, Las Vegas 2020-2023 Physical Therapy

BS University of Great Falls (Great Falls, Montana) 2013-2015 Health and Human Performance

**Licensure**

• Nevada State Board of Physical Therapy Examiners - License Pending Graduation May 2023

**Certifications**

OTAGO Exercise Program: Falls Prevention Program September 4, 2021
STEADI: Empowering Healthcare Providers to Reduce Fall Risk September 1, 2021
HIPPA Training June 8, 2020

**Employment / Clinical Experience**

Clinical Rotation – Let's Talk! Speech Therapy Services Jan 2023 – March 2023

- Performed evaluation and treatment of various pediatric diagnoses that included autism, down syndrome, congenital birth disorders, and torticollis.
- Guided pediatric patients through intense neuromotor rehabilitation program that used specialized equipment such as Neurosuit, pediatric LiteGait and Spider Cage.
- Provided an interdisciplinary treatment plan that included the collaboration with speech therapy and occupational therapy.

Clinical Rotation – Encompass Health Rehabilitation Hospital Sep 2021 – Dec 2022

- Participated in creating treatment plans and interventions for patients that present with conditions such as strokes, neurologic disorders, spinal cord injuries, and brain injuries.
- Was able to interact with health care professionals such as nurses, respiratory therapists, and physicians to provide quality care to patients in an inpatient rehabilitation.
- Used outcome measures when appropriate in order to assess level of function of patients and assist them increasing independence in for safe discharge.

Clinical Rotation – Sunrise System- Mountain View Hospital July 2022 – Sep 2022

- Participated in the care of acute injuries and patients that have undergone surgical procedures.
- Was consistently involved in the POC of patients with constant communication with other disciplines to ensure best possible outcome including case managers, nurses, CNAs, Physician Assistants, as well as other Physical Therapists.
- Was exposed to new robotic surgery systems and provided patients with up to date rehabilitation programs.

Clinical Rotation - Family and Sports Physical Therapy June 2021- July 2021

- Facilitated evaluation of patients in an outpatient orthopedic setting.
- Provided interventions and home exercise programs for patients with general orthopedic conditions.
- Was in charge of coordinating exercises with rehab technicians as well as maintaining proper flow of therapy sessions.

Kindred (LTAC) Hospital Las Vegas- Rehab Tech/Rehab Aide Feb 2019-Aug 2020

- Assist Physical Therapist, Occupational Therapist, and Speech Language Pathologist in the productive operation of treatment.

- Assist patients under supervision of PT and OT with early mobility program. (getting patients out of bed, providing exercises for patients.)
- Maintain the treatment area and prep therapy session.

Nifty After Fifty Encore- Physical Therapy Aide March 2016 – Jan 2018
- Physical Therapy is focused on geriatric population.
- Assist the Physical Therapist in anything that is need for the patient which includes hot pad, e-stim, ultrasound, and cold pack but mainly explain the exercise and workout that the Physical Therapist has planned out for them.
- Schedule appointments for the patients and other office duties associated with the patients.
- Answer and make phone calls when needed.
- Help wellness coach and fitness members with their workouts when needed.

Montana Flathead Rapids Soccer Camp Coach July 13- July 17, 2015
- Worked with young group of kids to improve their soccer skills.
- Went through a dynamic warm up and static stretching with high school players.
- Was in charge of a young group of kids, which involved a lot of multitasking and problem solving during the everyday session.
- Explained and directed soccer activities with a small group
- Helped with set up and pick up of activities

**Membership in Professional Organizations**
American Physical Therapy Association /Pediatric Section 2020- Present

**Service / Volunteer Activity**
Las Vegas AMBUCS March 25, 2023
- Assisted with building adaptive trykes for kids with a variety of disabilities.

Balance and Memory Screening September 18, 2021
- Participated in screening for balance and memory impairments in the geriatric population.

Las Vegas Rescue Mission Perlie Clause Toy Drive with UNLV- December 2020-2022
- Help raise toys for local Las Vegas Rescue Mission Homeless Shelter

CALV Winter Food Box Preparation December 2020
- Assisted in providing holiday groceries to families in the Las Vegas community.

Sunrise Hospital Volunteer- Cuddle Care Program January 2019
- Volunteered for a program that focused on providing interactions with babies to try and decrease the length of their stay. Doing things like feeding, holding, changing, and burping the babies were all part of the tasks, these tasks all help with decreasing stress from the parents, help the babies relief stress from their situation, and provides many health benefits like better sleeping and breathing patterns.

**Current Research Activity**
Student Researcher 2021-2023
Development of a Multifactorial Virtual Fall Prevention Tool for Community Dwelling Older Women
- Dr. Thessa Hilgenkamp & Dr. Jennifer Nash

**Educational Involvement**
NSCA NV State Clinic Event September 20, 2021
National Strength and Conditioning Association clinic with presentations and hands on opportunities covering following topics:

- Core Competencies of Strength and Conditioning and Their Application of the MMA Athlete
- Discipline Your Dedication – Action, Adversity & Advancement
- Relative Energy Deficiency in Sport (Red-S): A Syndrome of Low-Energy Availability & How to Avoid It
- How to Build Acceleration: A Systematic Approach to Developing Acceleration
- The Power of Joint Centration & How to Design Programs to Achieve It
- Strategic Business Growth Through Services Marketing

Physical Therapy Department's Distinguished Lecture series:

- Dr. Katherine Lang PT, PhD, FAPTA, "Wearable Sensors are Changing How We Think About Movement and Rehabilitation" & "Attempting to Improve Stroke Rehabilitation Across the Translational Pathway"
- Dr. Adriaan Louw PT, PhD, "Teaching People About Pain, Pain Neuroscience Education"
- Dr. Julie Fritz, PT, PhD, FAPTA "Pain Management in a Time of Dual Pandemics: Opportunities to Advance Health Equity"

UNLV's Multidisciplinary Didactics:

- Mike Israetel, PhD, Sports Didactic on Nutrition
- Dr. Brianna Millsaps MD, "Blood Flow Restriction"

Physical Therapy Department's Brown Bag Lecture series:

- Dr. Efosa Guobadia PT, DPT, Founder of PT Haven, "Global Community Health"

**Jacob James Nogra**

## Contact Information

jjamesnogra@gmail.com

## Education

- Doctorate of Physical Therapy, University of Nevada, Las Vegas (June 2020 -May 2023)
- Bachelor of Science in Kinesiology, University of Nevada, Las Vegas (August 2015-May 2020)
    - Graduated Cum Laude

## Clinical experience

- St. Rose Dominican Hospital – Siena (January 2023 – March 2023)
    - Acute care hospital with experience performing in a variety of settings such as ICU, ER, PICU, Ortho and Oncology conducting evaluation, examination, treatment, plan of care, and patient education with documentation under the supervision of my clinical instructor.
    - Provided care for a patient population of all ages with an emphasis on geriatric and a range of diagnoses consisting of respiratory, cardiac, neurological, and orthopedic conditions.
    - Saw a daily caseload of 12-13 patients. Everyday had a different number of evaluations and treatments, some days consisting of all evaluations.
- PAM Specialty Hospital of Las Vegas (September 2022 – December 2022)
    - Long-term acute care hospital carrying out evaluations, examinations, treatments, plan of cares, and patient education with documentation under the supervision of my clinical instructor.
    - Treated an LTACH patient population consisting primarily of geriatric but also included s/p ortho surgeries, chronic respiratory disease, failure to thrive, and patients on ventilators.
    - Caseload of 8-10 patients with 1-2 evaluations per day consistently throughout clinical.
- Let's Talk Speech Therapy Services (July 2022 – September 2022)
    - Provided care in an outpatient pediatric setting ranging from infants to teenagers participating in the evaluation, examination, treatment, and plan of care with patient and parent education with documentation under the supervision of my clinical instructor.
    - Care ranged from orthopedic conditions to neurological conditions such as: Cerebral palsy, Autism spectrum disorder, down syndrome, cognitive delay

    - This affiliation also included frequent collaboration with OT, SLP, and behavioral specialists.
    - Intensive care included Neurosuit, pediatric LiteGait, Spider cage, and other specialized equipment.
- Galena Sport Physical Therapy (June 2021 – July 2021)
    - Collaborated with Physical Therapists to treat patients of all ages with orthopedic conditions ranging from joint replacements, post-surgeries, sports injuries, overuse injuries, and impaired biomechanics.
    - This clinical affiliation utilized treatment techniques such as spinal manipulations, traction and 3DMAPS for patient interventions.
    - Completed evaluations, examinations, treatments, and plan of care under the supervision of my clinical instructor with a caseload of 12-16 patients per day with evaluations throughout the week.

**Employment**

- Dutch Bros Coffee, Las Vegas, NV – Barista (January 2022 – April 2023)
    - Duties Include: Serving customers with an outgoing attitude. Operating a POS on a regular basis prioritizing efficient service in a fast-paced work environment. Working as a team and preparing the store every shift for the rest of the team.
- Optimal Physical Therapy, Las Vegas, NV – Physical Therapy Tech (January 2020 – April 2020)
    - Duties Include: Educate patients on exercise and guide their exercise sessions under the supervision of a PT. In addition, this required constant communication with the staff in a busy working environment. Lastly, we had to maintain a safe work environment by ensuring patient safety while creating a warm atmosphere.

**Community**

- Walk MS (April 2023); 3 Hours
    - Participated in walk MS to support and bring awareness to multiple sclerosis
- OT House Fall Prevention Screening (August 2021); 4 hours
    - Provide free balance and memory screenings for adults in the community to advocate for fall prevention.
- Culinary Academy of Las Vegas (December 2020); 4 hours
    - Serve the community by preparing boxes of groceries to the community affected by the pandemic.

**Leadership**

- UNLVPT Spanish Club – Member (October 2021-May 2022)
    - Member of the UNLVPT Spanish Club
- UNLVPT Class of 2023 – Historian (July 2020-May 2023)
    - Document UNLVPT Class of 2023 in Academic and social settings
    - Compile and distribute photos to classmates
- Lambda Kappa Delta (Pre-PT) at UNLV – Fundraising Chair (January 2019-December 2019)
    - Communicate with businesses to create fundraising opportunities for the organization and raise money
    - Work with the rest of the executive board daily regarding fundraising as well as working on the internal aspects of the organization.

**Research Activity**

- In-service Learning/Research Project: "Development of a Multifactorial Virtual Fall Prevention Tool for Community Dwelling Older Women" Nash, J (October 2020 – Present)
    - Member of research group aimed at providing an easily accessible online training tool with the purpose of fall prevention in community dwelling women 65 and over. Our online training tool is multifactorial and will address every topic related to fall prevention that users can educate themselves on and we will be using feedback from participants to analyze the feasibility of this tool to use for future research and the community.

**Continuing Education Attended**

- Leadership skill development pathways:
    - APTA Learning Center Professionalism Module 1: Introduction to Professionalism (9/10/21) - 0.2 hours
    - APTA Learning Center Professionalism Module 2: History of Professionalism in Physical Therapy (9/10/21) – 0.2 hours
- Consume/Share
    - APTA Combined Sections Meeting, San Diego, California, February 2023, 24 Hours
    - UNLVPT Brown Bag Lecture Series
        - 4/28/23: Julia Goodwin, PT, DPT, NCS, "Clinical Management of ALS"
        - 4/23/21: Sarah Cwiak, PT, DPT, Board-Certified Clinical Specialist "Soft'skills: The Difference Between Being a Good PT and a Great PT"

        - 2/19/21: Danielle Garcia, PT, DPT, and Ron Garcia, PT, DPT “How Two UNLVPT Alums Paid Off $300,000 in Student Loans In Under 3 years”
        - 10/9/20: Aaron Copeland Pt, DPT, NHA, “Going into administration: Director of Rehabilitation”
    - UNLVPT Distinguished Lecture Series
        - 11/19/21: Julie Fritz PhD, PT, ATC, “Evidence-based Physical Therapy for Patients with Low Back Pain: Past, Present and Future”
        - 11/18/21: Julie Fritz PhD, PT, ATC, “Pain Management in a Time of Dueling Pandemics”
        - 9/12/19: Anthony Delitto PhD, PT, FAPTA, “Finishing the Job of Evidence Based Practice”

**Membership in Professional Organization**

- Member American Physical Therapy Association (2020 - present)
    - Member #: 896665

Carol Ann Sparks
**MOBILE** +1 (818) 613-3252
**EMAIL** casparks76@gmail.com

## *Education*

**DPT** University of Nevada, Las Vegas – Las Vegas, NV 2020-2023 Physical Therapy
**BFA** Illinois Wesleyan University – Bloomington, IL 1995-1998 Theatrical Design & Production

## *Licensure*

- Nevada Physical Therapy Board - License Pending Graduation and NPTE, July 2023

## *Certifications*

- Herman & Wallace Pelvic Floor Level 1 (September 2022)
- American Heart Association, BLS for Healthcare Providers (April 2021 – April 2023)
- The Otago Exercise Program: Fall Prevention Training Certified (November 2021)
- HIPAA Training Certified (September 2020)
- Blood-borne Pathogens Training Certified (September 2020)

## *Clinical Experience*

- 2/13/2023 – 4/21/2023 **Student Physical Therapist** – Dignity Health Physical Therapy – Blue Diamond – 400 hours, Outpatient Pelvic Health and Orthopedic

- 9/26/2022 – 12/2/2022 **Student Physical Therapist** - Valley Health System - Summerlin Hospital & Medical Center, Las Vegas, NV – 400 hours, Acute Care (ICU & Wound Care)

- 6/11/2022 – 9/16/2022 **Student Physical Therapist** - Sunrise System - Mountain View Hospital, Department of Physical Therapy, Las Vegas, NV – 400 hours, Inpatient Rehabilitation

- 6/7/2021 – 7/9/2021 **Student Physical Therapist** - Movement for Life Physical Therapy, San Luis Obispo, CA – 200 hours, Outpatient Orthopedic, Rural Affiliation

## *Additional Employment History*

- 2015 – 2020 **Head of Wardrobe** – Hollywood Pantages Theatre, Los Angeles, CA
  - Coordinated with touring companies in the installation of large-scale Broadway productions
  - Supervised union wardrobe crew
  - Ensured adherence to local wardrobe contract requirements
  - Tended to the wardrobe and personal needs of artists during performances
- 2010 – 2015 **Wardrobe Supervisor** – Geffen Playhouse, Westwood, CA
  - Assisted Costume Designers and actors during technical rehearsals and performances
  - Generated dressing lists and quick-change cue tracks for production runs

- Performed alterations and repairs on costume pieces

o 2010 **Costume Coordinator** – Kaiser Permanente Educational Theatre Program

- Facilitated costume acquisition, budgeting, and fittings for 6 concurrent productions
- Provided support for summer youth programs advocating health interventions for underserved schools
- Themes addressed by educational performances: childhood literacy, hygiene, diet and exercise, cyberbullying and suicide prevention, and teen sex education and STI prevention

## *Membership in Professional Organizations*

- American Physical Therapy Association (2020 - present), Member #: 900849
- Nevada Physical Therapy Association (2020 – present)
- Academy of Pelvic Health Physical Therapy (2021 – present)
- International Alliance of Theatrical Stage Employees (2010 – present) Local #768

## *Service*

**Professional**

- Skyview YMCA – Fall Prevention Screenings – Fall Prevention Screenings (6/17/2022); 2 hours
- City of Henderson Downtown Senior Center – Fall Prevention Screenings (5/4/2022); 2 hours
- Rock Steady Boxing (12/6/2021 – 5/15/2022); 6 hours
  - Set up equipment, taught exercises, and supported participants with Parkinson's Disease
- UNLVPT – Community Clinic Club – Member (1/18/2021 – 5/15/2021)
  - Participated in all trainings for UNLV Community Clinic & VMSM Back School
- UNLV PT/OT & Cleveland Clinic – National Fall Prevention Awareness Week (9/18/2021); 6 hours
  - Provided balance, memory screenings, and informational resources to older adults
- APTA - Legislative Action Center (9/1-10/2021); 2 hours
  - Participated in the APTA #FightTheCut Campaign
- IATSE Local #768, Contract Negotiation Committee (1/21/2020 – 3/2/2020); 20 hours
  - Worked with locals, Business Agent, union rep, & producers to negotiate a 5-year labor contract between the Pantages Theatre and the Wardrobe Union

**Community**

- UNLV Campus Community Garden (3/25/2022 – 9/4/2022); 10 hours
  - Assisted with events, weeding, cleanup, & general maintenance
- UNLVPT – Diversity, Equity, & Inclusion Club – Member (8/27/2020-present)
- Culinary Academy Las Vegas – The Just One Project (12/17/2020); 2 hours
  - Food assistance program volunteer: assembled food boxes for county residents
- IATSE Mask-Making Task Force (2/15/2020 – 5/15/2020); 50 hours
  - Sewed and donated masks for healthcare workers at local hospitals
- Los Angeles LGBT Center - Senior Services (4/15/2020 – 4/27/2020); 10 hours
  - Sewed and donated masks for senior community members
- IATSE West Coast Office & Los Angeles Regional Food Bank (4/8/2020); 4 hours
  - Food drive volunteer: unpacked pallets, packed food boxes, & distributed boxes to community members

## *Research*

o Co-investigator: “Development of a Multifactorial Virtual Fall Prevention Tool for Community Dwelling Older Women” Hilgencamp T., Nash J.

- Research and development of an online website that addresses fall risks for women over the age of 65

## *Continuing Education*

o Herman & Wallace Pelvic Rehabilitation Institute: Pelvic Floor Level 1 (September 17-18, 2022) – 24 hours

- Introduction to Female Pelvic Floor Function, Dysfunction and Treatment

o APTA Pelvic Health: Physical Therapy in Gender-Affirming Care: Transgender Health (June 11, 2022) – 17 hours
o Institute for Birth Healing: 2022 Birth Healing Summit (April 4-13, 2022) – 20 hours
o UNLV Sports Medicine Club: Taping Lab (March 24, 2022)
o APTA Combined Sections Meeting, San Antonio, TX, (February 4-7, 2022) – 22 hours
o APTA Nevada: Grass Roots Office Hours “Key Contact Initiative” (November 11, 2021) – 1 hour
o APTA Pelvic Health: 2021 2nd Annual Fall Symposium (September 18, 2021) – 8 hours
o CDC Training and Continuing Education (August 29, 2021) – 3 hours

- STEADI: Empowering Healthcare Providers to Reduce Fall Risk

o Clark County Department of Family Services (November 16, 2020); 3 hours

- Mandated reporter training for childhood abuse and neglect

o APTA & The Physical Therapy Learning Institute

- Lynda D. Woodruff Lecture: “Overcoming DEI Fatigue” (June 16, 2022)
- Lynda D. Woodruff Lecture: "The Road to Success: Are We Ready to Change Direction?" (June 17, 2021)
- Lynda D. Woodruff Lecture: “Who Do We Want to Be? Responsible Stewardship of Our Profession” (July 26, 2020)

o APTA Nevada Annual Member Business Meeting (October 10, 2020) – 2 hours

- Featured speaker Dr. Patrick Berner “Time to Embrace Holistic Care”

**Bradley Voels**
bradleyvoels@gmail.com

***Education***

---

- DPT - University of Nevada, Las Vegas (2020-2023)
  - Physical Therapy
  - Expected graduation May 2023
- BS - University of Nevada, Las Vegas (2016-2020)
  - Kinesiological sciences (Cum Laude)

***Licensure***

---

- Nevada Physical Therapy Board – License pending graduation May 2023

***Certifications***

---

- American Heart Association, Basic Life Support (April 2021-April 2023)
- STEADI Older Adult Fall Prevention Training Certified (August 2021)
- HIPAA Training Certified (June 2020)
- Blood-borne Pathogens Training Certified (June 2020)

***Clinical Experiences / Employment***

---

- SPT – Clinical Rotation at Fyzical Therapy and Balance Centers (January 2023-March 2023)
  - Evaluated and treated patients with a variety of vestibular, neurological, and orthopedic conditions
  - Implemented individualized and targeted interventions to address deficits, modifying as needed based on patient response
  - Proficient in use of multiple vestibular/balance specific equipment such as the Neurocom posturography machine and Epley Omniax Chair
  - 7 weeks at Pecos location in Nevada, 3 weeks at Buffalo location in Nevada
- SPT – Clinical Rotation at Southern Hills Hospital (September 2022-December 2022)
  - Treated, educated, and evaluated patients for discharge readiness in the acute setting, including patients with same day orthopedic operations
  - Collaborated with OT, SLP, and nursing daily to coordinate and facilitate high quality patient care
  - Address: 9300 W Sunset Rd, Department of Rehabilitation, Las Vegas, NV 89148
- SPT – Clinical Rotation at Advanced Health Care of Henderson (July 2022-September 2022)
  - Evaluated, treated, and developed discharge plans with respect for patients' unique levels of function, social support, and home environment
  - Facilitated interventions with high complexity patients, including dependency with transfers and bed mobility, neurologic conditions, and significant cardiopulmonary limitations
  - Address: 1285 E Cactus Ave, Las Vegas, NV 89183
- SPT – Clinical Rotation at Fit Physical Therapy, Overton (June 2021-July 2021)

- Conducted evaluations, interventions, and assisted in discharge planning in the outpatient setting
- Developed professional skills with regard to working within a rural setting
- Address: 475 N. Moapa Valley Blvd, Overton, NV 89040

· Physical Therapy Aide – Family and Sports Physical Therapy (August 2017-May 2020)
- Guided and instructed patients through engagement in therapeutic exercises and stretches
- Coordinated patient care daily in a methodical and efficient manner
- Address: 7351 Prairie Falcon Rd Suite 100, Las Vegas, NV 89128

***Current Research Activity***

---

· A Multifactorial Virtual Fall Prevention Tool for Community Dwelling Older Women – A Feasibility Study. Authors J. Nash, T. Hilgenkamp, E. Gutierrez, J. Nogra, C. Sparks, & **B. Voels**.
- Development of an online fall prevention tool and creation of an algorithm to personalize fall prevention recommendations.

***Membership in Professional Organizations***

---

· Member of the American Physical Therapy Association (2020-present)
· Member #: 891381

***Service / Volunteer Activity***

---

· Professional
- Fall Risk Screening – Mesquite, NV (July 2022)
- Fall Risk Screening – YMCA (May, June 2022)
- UNLV PT Interview Day (January 2022)
- Rock Steady Boxing (November 2021)
- Balance and memory screening (September 2021)

· Community
- UNLV PT Day of Service Event volunteer (October 2021)
- Wheelchair rugby volunteer (June 2021)
- CALV Winter Food Box Preparation volunteer (December 2020)

***Educational Activities***

---

· APTA CSM (February 2023)
· APTA CSM (February 2022)
· UNLV PT Distinguished Lecture Series (2021-2022)
· UNLV PT Brown Bag Lectures (2020-2021)
· APTA Professionalism Series (September 2021)
- Professionalism Module 1: Introduction to Professionalism
- Professionalism Module 2: History of Professionalism in Physical Therapy